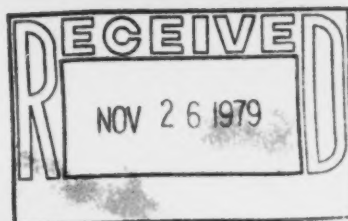


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The Property Tax—Equity and Protest in New Mexico and California

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THE DYNAMICS OF PROPERTY TAX EQUITY

One of the canons of taxation, which is attributable to the Scotsman Adam Smith and has been reiterated by various sources since the eighteenth century, states that equals should be treated equally. When applied to the property tax, the objective requires that the effective tax rate on real property—the ratio of tax payment to market value—should be uniform for each parcel within a taxing jurisdiction. (The tax payment equals the assessed value multiplied by the tax rate or millage levy.) Legitimate exceptions occur only when the quantity or quality of goods and services delivered by local government varies systematically.

The Constitution of New Mexico, like those of most states, specifies that real property must be assessed at a uniform percentage of market value for each class of property.¹ This ensures that effective tax rates for each class of property within a jurisdiction are uniform except in cases in which the mill levy varies because of designation of special assessment districts. Furthermore, most states specify that *all* real property be assessed at the same ratio of market value.² Tax structures have recently received scrutiny nationwide in the wake of the success of the 1978 ballot issue Proposition 13 in California. Ironically, the engendering policies of Proposition 13, which are designed to limit property tax rates, will result in reduced tax equity. In New Mexico, limitations on effective property tax rates have recently been applied; however, inequality has become more

prevalent and exacerbated since the 1966-1967 statewide reappraisal. Taxing procedures in California and New Mexico are compared with particular focus on property tax equity in Bernalillo County, New Mexico.

Property tax litigation in California and other states in the 1960s resulted in rulings which affirmed that disparities in assessed value ratios would not be tolerated.³ State legislatures have responded by encouraging and enforcing all-inclusive reappraisal programs to more closely approach the goal of tax equity. The major cause of tax inequities is the application of non-uniform ratios of assessment to market value both within and among taxing jurisdictions.⁴ Uniform assessment ratios among taxing jurisdictions are necessary to insure equity when state government utilizes property tax revenues or when state funding formulas are based on assessed values. Uniform assessment ratios within a jurisdiction are necessary to achieve equal effective tax rates.⁵

While tax administrators and researchers have long recognized assessment inequities, only recently have cost effective techniques evolved which permit frequent and accurate reassessments. The decreasing cost of computers and acceptance of statistically based, mass-appraisal techniques have made electronic data processing a major tool of modern property tax appraising. In the early and middle 1960s county treasurers and tax authorities computerized maintenance of tax rolls, mailing lists, bills and tax accounting. Although proposals for applying statistical tech-

niques to mass appraisal of real property originated in 1958,⁶ applications of the technique did not begin until some years later.

The California State Board of Equalization encouraged computerization by providing technical support in the form of computer time, consulting and educational seminars.⁷ Their primary goal was to reduce interjurisdictional assessment differences. Orange County, California was a pioneer in the institution of these techniques, followed by several other larger California counties.⁸ Other jurisdictions have adopted similar techniques; early users include Lane County, Oregon,⁹ North Dakota,¹⁰ New Jersey¹¹ and recently the State of New York.¹²

Computerized, statistically based appraisal permits a tax assessor to revalue all properties in a jurisdiction simultaneously and avoid the problems associated with piecemeal appraisals. Thus, there are no constraints placed on the frequency of reappraisal. The seminal reason for the continued incorporation of computer-aided reappraisal is its cost effectiveness. Its accuracy has been found to be superior to traditional, manual appraisal techniques¹³ and appraisal can be achieved at lower costs than manual methods. A cost comparison reveals that in addition to a \$15.00 per parcel start-up cost of a fully automatic system, the per parcel annual or operating cost for an ongoing computer-based system is \$1.00-1.50;¹⁴ a single manual reappraisal ranges from \$5.00 to \$25.00 per parcel when performed by outside contractors.¹⁵ Because of the technological superiority of a computer based reappraisal system, and its attendant cost effectiveness, the California State Board of Equalization supported its use and six counties had operational systems by 1972. Experimentation and testing continued in other counties and by 1977 several more California jurisdictions had adopted the computerized method, including the largest county, Los Angeles.¹⁶ Consequently, frequent reappraisal has maintained tax equity and increased the property tax base almost as rapidly as property values.

PROPOSITION 13

On the eve of the statewide electoral consideration of Proposition 13, the tax assessor of Cali-

fornia's most populous county, Los Angeles County, sent out notices of assessed value to all property owners. These assessments represented substantial increases reflecting the rapidly rising property prices which have been characteristic in California. These notices aggravated the public's festering tax consciousness and inspired decisive passage of the measure.

Proposition 13 provides that property assessments be rolled back and frozen at a previous year's level for properties which had not changed hands or been substantially improved. In addition, the measure established a maximum effective tax rate for all property. Therefore, static assessed values are created for properties not sold while market-based tax assessments apply to properties either resold or newly constructed. As the housing market inflates, the inevitable result over a period of time will be growing tax inequity. Beleaguered by recent unrelenting tax increases, Californians ignored the inherent potential for long-term disparity in Proposition 13, and voted to reap the immediate benefit of reduced taxes.

In theory, the computer-based appraisal methodology should have atrophied one of the most persistent criticisms of the property tax—inequality of its applications.¹⁷ One ramification of the system's efficacy seemed to go unnoticed prior to its adoption—the system results in regular and total growth in the tax base. Politicians may have interpreted these assured revenue increases as a willingness of property owners to support additional services of local government. Therefore, rather than lowering nominal tax rates as assessed values rose so that tax revenues would remain constant or rise moderately, the local government politicians maintained existing millage levels (often at the maximum rate allowed) and increased spending to absorb rising tax revenues.

PROPERTY TAX CHANGES IN NEW MEXICO

The type, impact and adaptation of property tax law in New Mexico have not paralleled those of California. From 1921 until 1974 the New Mexico tax code contained a section which limited the increase in property tax revenues in each county to no more than 5 percent a year. This section of the tax code effectively constrained

local spending; for example, if a reassessment were conducted, the millage levy would have to be adjusted so that the restriction on increased revenues would not be violated.¹⁸ After hearings before the Tax Study Committee, the 1974 Legislature updated the property tax provisions. In the process, either inadvertently or by design, the 5 percent limitation on yearly gross revenue increases was removed.¹⁹ The restructuring was extensive; other sections of the act provided administrative guidelines for valuation of property, and granted county assessors responsibility for maintaining current value by reappraisal on a regular basis.²⁰

Before these changes in the tax code, the last state-ordered reappraisal was accomplished by each county between 1966 and 1970. Only Bernalillo (on a basis explained below), Roosevelt, Mora and Los Alamos Counties initiated reassessment to achieve tax equity based on the revised property tax code (effective January 1, 1975).²¹ Since the late 1960s, the rate of inflation and the economy of New Mexico generally, and the Albuquerque Standard Metropolitan Statistical Area in particular, have undergone continuous and rapid growth. When summed, growth and inflation are especially evident in land values, construction costs, and prices of new and existing housing. The result is gross inequity in effective tax rates in counties in which complete and accurate reappraisals have not been conducted since the late 1960s. New construction is appraised in the year of its completion and computed at a level close to its market value, while older properties remain appraised at their previous levels until reappraisal occurs. Therefore, lack of reappraisals creates increasing disparity between old and new properties.

Pursuant to the tax code, the Property Tax Department of New Mexico collects sample sales data and computes the ratio of assessed value to sales price for each county.²² Data from 1974 through 1977 indicate that the ratio of appraised value to market value for various counties deviated from 25.5 percent to 122.4 percent. The coefficient of dispersion is a percentage measure of the variation in this ratio. Between 1974 and 1977 the coefficient of dispersion ranged from 10.2 percent to 124.5 percent for various coun-

ties in various years, and increased in 20 of New Mexico's 32 counties. The International Association of Assessing Officers, the professional organization for property tax officials, advocates a 10 percent level of dispersion, but tolerates a 20 percent level. Only two New Mexico counties fall within either criterion based on 1976 and 1977 data. Obviously, the goal of tax equity has not been met in New Mexico.

In order to achieve tax equity among the separate tiers of the market (assigned by year built), and comply with the revised tax code, the Bernalillo County Assessor divided the county into geographical sections and initiated an incremental reappraisal program. Several neighborhoods containing expensive, newer and much appreciated residences were included in the first geographical section to be reappraised.

Increases in assessed values of 100 percent were common. Affected property owners were not pleased to be the initial recipients of the consequences of an equitable tax structure. Dissatisfaction culminated in a proposed tax code amendment introduced in the 1977 legislative session. Senator John Irick (R-Bernalillo County) sponsored legislation to restrict total increases in property tax revenues to 5 percent per year in each county, in a fashion similar to the pre-1974 law which limited increases to 5 percent.²³ However, Senator Irick was hospitalized during the session and guidance of Senate Bill 96 through the legislature was taken over by Representative Colin McMillin (R-Roswell). Subsequently, the language of the bill was extensively modified; the limitation was converted to a 10 percent maximum annual increase in the assessment for *each individual* parcel. This version of the bill passed during the hectic end of the session.

The organized efforts of the reappraised Bernalillo County property owners yielded a negative return, however, because the 10 percent limitation on assessments was not applied retroactively. Therefore, owners of reappraised property were responsible for the increased reassessments while the assessor was effectively precluded from reassessing other properties in a similar manner. The beneficiaries of the bill were owners of older properties not yet reappraised. The net result incorporated past inequities in the existing tax

structure. The goal of tax equity was annihilated because hasty reaction to the piecemeal reassessment in Bernalillo County failed to consider the realities and implications of New Mexico's property tax system. The attempt in Bernalillo County to institute an overall reappraisal to eliminate disparate tax rates resulted in effectively freezing those tax levels. The 10 percent limitation in New Mexico predated the Proposition 13 limitation in California. However, the New Mexico code change was instigated because of an attempt to reappraise in order to reduce inequity, while the passage of Proposition 13 was prompted by rising property tax bills.

TAX INEQUITY IN BERNALILLO COUNTY

When the State of New Mexico collects data to determine the ratio of assessed value to sales or market value, it only calculates the average ratio and the coefficient of dispersion. In order to determine the severity of the inequities accumulated since the last complete reappraisal in 1967, the authors selected the largest taxing jurisdiction—Bernalillo County—and a small portion of another—Valencia County—for detailed anal-

ysis.^{2 5} However, virtually all the counties in New Mexico are burdened by similar property tax inequities as described here for Bernalillo County. Ratios of assessed value to selling price deviations were analyzed to determine whether or not a number of factors were statistically significant in explaining this variation. The factors examined included the geographical section of the county, the property type, when the property had been constructed and whether or not it has been reassessed since 1975.^{2 6}

A sample of 484 property sales for which the assessed value could be determined was selected.^{2 7} The average ratio of assessed value to selling price, its coefficient of dispersion, the average year of construction, and the percentage of properties reassessed were computed by county, area of county, and property type as shown in Table I.

A caveat is required before interpreting these statistics. The sample is drawn from the Albuquerque Board of Realtors' multiply listed properties which sold, and is therefore biased. Many property sales are not included in multiple listings, and a random selection of these sales does

TABLE 1
PROPERTY TAX ASSESSMENT PRACTICES

	<u>Assessed Value Sales Price¹</u>	<u>Coefficient of Dispersion</u>	<u>Average Year Built²</u>	<u>Percentage Reassessed</u>
Bernalillo County Total	.495	32.5	1968.5	36.0
Northeast	.489	27.4	1968.7	27.7
Southeast	.462	30.7	1966.8	61.3
Northwest	.454	36.8	1968.0	18.0
Southwest	.563	31.1	1969.0	79.0
Other Bernalillo County (South Valley, Paradise Hills, West Mesa)	.606	21.1	1969.7	0.0
Commercial/Business	.451	47.9	1966.0	75.0
Vacant Land	.301	65.8	1966.0	
Not Reassessed	.482	32.6	1968.6	
Reassessed	.546	29.5	1968.1	
Valencia County Total	.437	35.7	1969.5	

1 Sample drawn from first six months of sales in 1978 - Multiple Listed Properties. Total of 484 observations.

2 All properties built in 1966 or before are coded as 1966.0.

not necessarily reflect the population characteristics of all properties.

Nevertheless, the results for Bernalillo County are consistent with those reported by the New Mexico State Property Tax Division. Using 1977 data the Property Tax Division estimated the average ratio of assessed value to sales price for Bernalillo County at 53.5 percent, whereas the resulting ratio from this study was 49.5 percent. The difference is attributable to sampling error and the fact that these data are collected from the last half of 1977. The coefficients of dispersion are more similar—33.5 percent versus 32.5 percent for the data presented here. The results are not consistent in the case of Valencia County because of the small samples extracted by the state (89) and by this study (46).

Bernalillo County was divided into five sections—Northeast, Southeast, Northwest, Southwest and other (primarily the West Mesa)—in order to provide a basis for geographical analysis. Significant variations were found in assessed values among sections, as well as in the accuracy of assessments within each section. The same statistics were computed for commercial and business properties and vacant land parcels. (See Table I.) Vacant land is clearly assessed at a lower rate than other properties and its variation is substantially larger than other properties. This finding is consistent with virtually all other studies of assessing practices; vacant land is consistently assessed inaccurately and at a lower ratio than developed property.

The Bernalillo data were also grouped by whether reassessment had been conducted in the 1975-1976 period. Although the reappraisal process has slightly increased the average assessment ratio (from 48.2 percent to 54.6 percent) the coefficient of dispersion has not been reduced significantly (from 32.6 percent to 29.5 percent) and remains well above of the tolerable level of 10 to 20 percent recommended by the International Association of Assessing Officers.

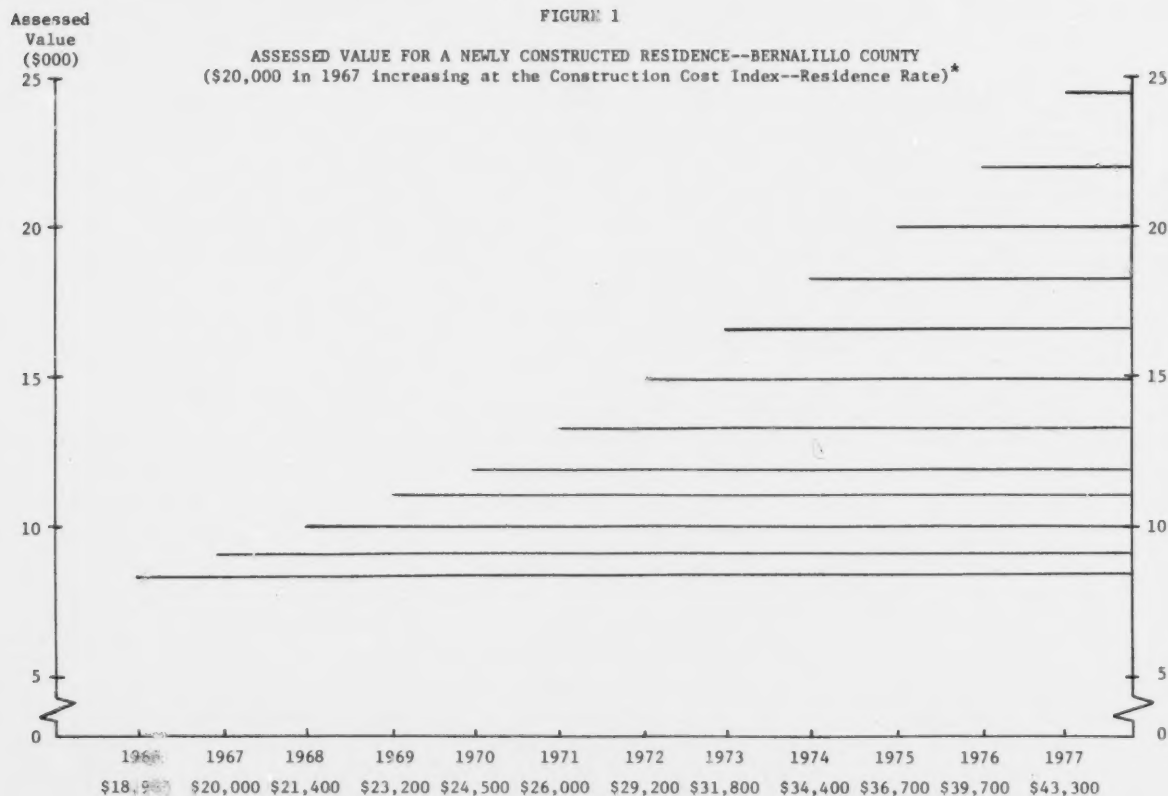
Regarding the 1977 10 percent limitation law, how severe are the inequities which past practice and state lawmakers have established and protected? To answer this question the following statistical relationship was considered: the year the property was constructed and placed on the

tax rolls (and whether or not it had been reassessed in 1975-1976) was related to the ratio of assessed value to market value. The ratio of assessed value to market value is the variable factor determining the effective tax rate. This was accomplished for each *category* in Table I by means of multiple regression analysis. However, only the results for the total of all five geographical sections of Bernalillo County are presented. This statistical relationship was used to compute how an equivalent single-family residence is treated by the tax assessor over time.

A new single-family residence is assumed to be constructed in each year from 1966 through 1977, and assessed in that year without subsequent reassessment. Furthermore, the cost of constructing this residence in each year is assumed to increase at a rate commensurate with the Residence Construction Cost Index compiled by the U.S. Department of Commerce.²⁸ The results from the statistical analysis of appraising practices were applied to the hypothetical residence²⁹ and to the probable assessed value computed from the statistics calculated for all of Bernalillo County.

Figure 1 reveals that the assessed value of \$9,100 in 1967 for the hypothetical \$20,000 house would have remained constant until reassessment. A house built in 1977 but equivalent to a \$20,000 house in 1966 would cost \$43,300 to construct and would have been assessed at \$24,500 in that year. Those familiar with the Albuquerque housing market realize that the Department of Commerce index underestimates price increases because cost of land is not included in the index. However, the example is internally consistent because the ratio of assessed to market value has been analyzed, not the absolute market price or assessed value. The vertical differences among the horizontal lines show how the tax inequity rises as the age difference in the newly constructed house increases. (Again, this comparison assumes that no reappraisal occurs.)

In California efforts to achieve tax equity resulted in Proposition 13, a limitation and rollback on assessed levels; because properties may only be reassessed upon sale or major improvement, this measure provides the basis for future and greater inequities. In comparison, New Mexico allowed tax inequities to continue except for a restricted



*Cost Index found in 1977 Statistical Supplement to the Survey of Current Business, U.S. Department of Commerce, Bureau of Economic Analysis, p. 56.

reappraisal program which in itself created greater inequities because of its limited application. Reaction to this poorly timed and executed reappraisal precipitated the enactment by the 1977 Legislature of parcel-by-parcel assessment limited to a 10 percent maximum increase which sustained past inequities.³⁰ Subsequently, the 1977 law was also repealed. The 1979 Legislature converted the tax limitation to a formula which places a taxing limitation on an entire jurisdiction rather than the limitation which applied to each property. The formula is based on the inflationary increases in running local government and the value of new construction added to the property tax rolls.³¹

The question of the governmental and social costs of new growth became a technical and political concern in the early 1970s.³² In response to the problem, Albuquerque's city government inaugurated coordinated, long-range capital im-

provement expenditure planning. As part of that effort the City/County Planning Department estimated the total cost of providing municipal services for typical, newly constructed residences and the revenues expected from those residences. The findings were that mobile homes and moderately valued single-family residences did not pay their way. This study, coupled with political pragmatism, precipitated a policy of increasing fees for hooking up to city utility systems and encouraging developers to provide all of their on-site street and utility systems.³³ In effect, since implementation of this policy in 1972, this policy has decreased the need for funding utility and street expansion in the city's growing periphery with municipal bonds. Priorities for this released bonding capacity have been directed to acquiring open space, and redeveloping and rehabilitating utility systems, streets and other public capital in older sections of the city.

The policy has served residents of older areas—a majority of the city's population—by benefiting them financially. Increased costs of land development because of city policies and inflation are paid by private developers, which in turn are generally passed on to consumers. Therefore, higher land costs result. Because existing properties compete with new construction, these cost increases for new development have indirectly increased values of existing property. Consequently, owners of older properties are relatively content, but this predisposition may change should the delivery of services and low effective tax rates for older properties be modified.^{3,4}

The impact of the assessing practices in Bernalillo County as demonstrated in Figure 1, is not insubstantial. The owner of a house built in 1977 will pay 2.7 times the effective tax rate applied to a similar home built in 1967. When combined with the current 70.26 mill levy in Bernalillo County, this means that the owner of a home built in 1977 will pay an effective property tax rate of 4.0 percent. The owner of a home built in 1967 will pay a rate of 1.48 percent.^{3,5}

The overall balance of tax rate/service bundles between newly constructed and older properties in the Albuquerque area is not known precisely. However, it is apparent that since the frozen 1967 reappraisal, two factors have combined to benefit owners of older properties. The first is the funding shift in growing peripheral areas from general obligation bonds to fees and developer-supplied streets and utilities. Second, a movement of public investment policy towards older areas has been supported by general tax and bond revenues. For example, owners of houses with 1,800 to 2,000 square feet which were built in (well-maintained, desirable) older Albuquerque neighborhoods paid taxes of \$350-\$400 in the 1978 tax year. In comparison, the owner of a newly constructed (1976-1977), single-family home of equivalent size in an area of recent development may have paid as much as \$900-\$1,100 in the 1978 tax year. These inequities make new residences more expensive to maintain than would be the case under an equitable tax structure. Consequently, the number of new home starts is less than would otherwise be the case and this in turn engenders an inefficient use of resources. Although other

counties and municipalities of New Mexico are not analyzed here, similar tax inequity clearly exists, as reported by the State Property Tax Department; benefits from local government expenditure, may also be unequally distributed.

Thus, Albuquerque and the rest of New Mexico lag behind California in terms of approaching the goal of tax equity. The latent potential for a tax revolt by property owners who are more heavily burdened by taxes remains, particularly in Albuquerque where the balance of the public service benefits compared to tax cost bundle is so distorted. The growing differences fuel instability.

CONCLUSION

The unbalanced status quo in New Mexico has evolved from a combination of factors. One ingredient has been the confusion about taxing limits and how they really operate in controlling certain aspects of taxation as compared to the control of overall tax revenue.^{3,6} The nuances of the logic and effect of different types of tax limits may have resulted in legislative confusion. Another consideration is that both old and new property owners are not aware of the realities of their tax postures. In order to equalize tax rates, the institution of frequent and accurate computer-based reappraisals in metropolitan areas of New Mexico would be a logical and significant step. Without such an effort in Bernalillo County, for example, legal actions for relief could result in court-ordered reappraisal for this important New Mexico tax jurisdiction. Alternatively, influences could coalesce to present the issue in a tax reform ballot. If administrative channels do not respond to this problem, the Albuquerque area's rapid growth rate and proportionate increase of property taxpayers who are assessed at higher new-residence rates suggest that voter sentiment could shift. In turn, this potential shift could directly affect the election of the county assessor.

The longer the problem is ignored, or merely subjected to a patchwork of political promises, the more likely that a ballot issue appealing to aggrieved taxpayers will be presented as an expedient panacea. A referendum can be easily avoided by implementing a well-planned reappraisal system which would subdue and eliminate the deleterious effects the unequal taxation imposes upon the economic environment.

FOOTNOTES

1. N.M. CONST. art. I, § 1, reads, in part, "Taxes levied upon tangible property shall be in proportion to the value thereof, and taxes shall be equal and uniform upon subjects of taxation of the same class."
2. See, R. Lindholm, *Property Taxation—U.S.A.* (Madison; Univ. of Wisc. 1967); A. Lynn, Jr., *The Property Tax and Its Administration* (Madison; Univ. of Wisc. 1969); D. Netzer, *The Economics of the Property Tax* (Wash. D.C., Brookings Institute 1966); G. Peterson (ed.), *Property Tax Reform* (Wash. D.C., Urban Institute 1973).
There are exceptions to across the board equality in tax rates as percentage of market value. For example, in Arizona mineral extracting industries are mandated to be assessed to market value ratios 60 percent higher than all other classes of property.
3. For example San Francisco underwent court ordered reappraisal in 1967.
4. See, R. Garrett and R. Lassiter, *The Burden of Real Property Taxes Under Varying Assessment Ratios: A Case Study* (Studies In Public Administration No. 28 Gainesville, Univ. of Fla. 1965); R. Hird, *Property Tax Assessment Bias in the Phoenix Urban Area* (1970) (thesis in the Arizona State University library); and, Netzer, *supra* at note 2. See generally, United States Bureau of Census, *State and Local Ratio Studies and Property Assessment*, State and Local Government Special Studies, No. 72 (August 1972); United States Bureau of Census, *Trends in Assessed Valuations and Sales Ratios, 1956-66*, No. 54 (1970); U.S. Congress, Senate Subcommittee on Government Operations, *Property Tax Relief and Reform Act of 1973: Hearings Before the Subcommittee on Intergovernmental Relations*, 93rd Congress, 1st Sess. (Wash. D.C. (May 1973); P. Cheng, *Common Level of Assessment in Property Taxation*, 1970 National Tax Journal 50-65; and, P. Cheng, *Property Taxation, Assessment Performance, and Its Measurement*, 29 Public Finance 268-284 (1974).
5. Effective tax rates are the result of assessment ratio multiplied by the nominal tax rate or millage levy.
6. See, E. Renshaw, *Scientific Appraisal*, 11 National Tax Journal 314-22 (1958).
7. A. Hindshaw, *Assessor and Computerization of Data*, 3 Assessors Journal 59-74 (1968). See generally, A. Church and R. Gustafson, *STATISTICS AND COMPUTERS IN THE APPRAISAL PROCESS* (1976).
8. See, J. Jancsek, *Property Tax Assessment Applications of Multiple Regression Analysis in California*, Center for Real Estate and Urban Economics, Report No. 4, Berkeley, Univ. of Calif. (1972).
9. S. Hamilton, *Computer Assisted Value Estimates: 1970* (Eugene, Ore.: Lane County Dept. of Assessment and Taxation, 1970).
10. M. Miller, *Correlation of Three Approaches and Final Estimation of Value*, 1968 Proceeding of South Dakota Assessing Officers 155-85.
11. J. Arnold, *Data Processing for Local Tax Rolls*, 1967 New Jersey Municipalities. See also, R. Meloro, *Electronic Tax Records in Hanover Township*, 1968 New Jersey Municipalities.
12. *Computer Streamlines Town's Tax Assessments, Ramapo, N.Y.*, 89 American City 120 (1974), and M. Cox, *Issues in Interjurisdictional Assessment Equalization in State Level Agencies*, 10 Assessors Journal 3-21 (July 1975). See also, R. Blettner, *Mass Appraisals Via Multiple Regression Analysis*, 37 Appraisal Journal 513-21 (1968); F. Case, *Computer Applications in Real Estate Appraisal*, (unpublished paper at U.C.L.A. library); J. Cole, *Performing Appraisal Computation by Data Processing Equipment*, 1964 Assessment Administration 128-31.
13. See, Church and Gustafson *supra* at note 7, at 99-105 and 142.
14. This reflects the cost when original data must be collected. See, Church and Gustafson *supra* at note 7, at 2.
15. *Id.* California experience indicates that computer-based reappraisals are less costly when operating an in-house, four-year manual reappraisal cycle.
16. Jancsek, *supra* at note 8.
17. That is, criticism generated by either discrepancies in manual reappraisal or poor administration of reappraisal timing.
18. N.M. Stat. Ann. § 72-4-9 (1953) reads in part, "Tax Rate Limited To Five Per Cent Increase Each Year. No county, city, . . . shall make tax levies which will . . . produce on the face of the tax roll, an amount more than five per cent . . . in excess of the amount produced . . . the year preceding. . . ."
It is important to note the wording of the limiting language of § 72-4-9. "[O]n the face of the tax roll" refers to the amount calculated by multiplying the mill levy (dollars taxed per thousand dollars) by the assessed value of the property. The five percent limit then, referred to gross increase in revenue. Adjustments could be made to remain under the limit; if assessments were higher generally because of recent reassessment, the tax burden would be prevented from a similar increase by lowering the mill levy accordingly.
19. N.M. Stat. Ann. § 7-37-7 (1978). The statute is head-noted, "Tax Rates Authorized; Limitations." However, because only mill levies are regulated in the statute, the extent to which it limits gross revenue

- increases varies from its predecessor. A variation in assessed value, under this system, can result in a dramatic increase in the overall tax levy. This may be true even though the mill levy remains within its statutory guidelines. The "face of the tax roll" is freed from scrutiny which effectively deregulates tax variances resulting from an inflated property market.
20. N.M. Stat. Ann. § 7-36-16 (1978); assessors to maintain current value; N.M. Stat. Ann. § 7-38-1,93; administration and enforcement of property taxes.
 21. Mora County completed their mandated reappraisal for tax year 1978. Roosevelt County reached most of their county for tax year 1979. Los Alamos claims to have been updating continuously so that they are currently correct.
 22. N.M. Stat. Ann. § 7-36-18 (1978).
 23. Senate Bill 96, 33rd Legis. 1st Sess. 1977. Laws 1977, N.M. Vol. III, ch. 361.
 24. N.M. Stat. Ann. § 7-36-17 (1978).
 25. The authors are grateful to the students of the Urban Economics class, spring 1978, at the University of New Mexico for collecting and tabulating these data.
 26. For the purposes of this study, reassessment in 1975 or later was considered recent.
 27. Elimination was caused by problems in relating street addresses, legal descriptions and the assessor's identification numbers.
 28. The index underestimates price increases because land costs are held constant in the formula but are a dominant factor in price increases in the 1960s and 70s. This results in a conservative estimate; evidence indicates that the cost of developed land has risen faster in Albuquerque than in many other locations.
 29. This hypothetical residence cost \$20,000 in 1967, and the size and quality of the structure were held constant in real terms.
 30. See, *In re Miller*, 88 N.M. 492, 542 P.2d 1182 (Ct. App.), cert. denied 89 N.M. 5, 546 P.2d 70 (1974). This case upheld the constitutionality of piecemeal reassessment and held that all properties need not be assessed in the same year. Other constitutional issues concern questions of administrative due process.
 31. Laws 1979, ch. 268. N.M. Stat. Ann. § 7-37-7.1 (1978).
 32. See, *The Costs of Sprawl*, U.S. Department of Housing and Urban Development, Environmental Protection Agency and Council on Environmental Quality, U.S. Government Printing Office (1974).
 33. The current utility hookup fee in Albuquerque is approximately \$1,000 per residence and is earmarked for major city water and sewage facilities. The costs of smaller water lines, meters and installation are paid privately at the time of development.
 34. Evidence of the mercurial quality of resident attitudes was seen in the negative public response to the 1975-76 partial reappraisal.
 35. Both of these rates are less than those in many areas. For example, in Newark, New Jersey, residents pay a tax rate of about 7 percent. It is large in absolute value as well as differentially. Since the tax is levied on a stock value, it should be converted to a tax on the flow of services emanating from a residence. A 12 percent rate is reasonable; thus a 4 percent effective property tax rate is equivalent to a 33.3 percent excise tax on housing services, and a 1.48 percent effective tax rate is equivalent to a 12.33 percent tax on its services.
 36. See discussion, *supra* at notes 18 and 19.

Dale Bellamah

1914-1972

JOSEPH E. WEISS

[Joseph E. Weiss obtained his bachelor's degree from St. Olaf College (Northfield, Minnesota) in 1959 and master's degrees from Luther Theological Seminary in 1963 and the University of Detroit in 1976. As a doctoral student within the American Studies Program, he is studying Sunbelt migration and writing his dissertation on Rio Rancho's growth and development as a "Sunbelt community."]

In reference to early cities as they grew out of the American frontier Seth Low remarked, "The problem in America has been to make a great city in a few years out of nothing."¹ His statement reflects the realization that cities were constructed in spite of seemingly insurmountable natural obstacles. "Throughout history," William Angel says, "a unique type of capitalist—the urban entrepreneur—has played the leading role in surmounting these natural barriers and converting them into a basis for dynamic growth."² In a sense, post-war Albuquerque was also largely shaped by urban entrepreneurs of whom Dale Bellamah was uniquely prominent.

By the time he died in 1972, Bellamah's mark upon Albuquerque and the Southwest was profound: construction of more than 10,000 homes in four states; development of nine shopping centers in Albuquerque and Santa Fe; creation of a 120-acre mobile home park, the largest in New Mexico; and establishment of the Mountain States Financial Corporation, originally a mortgage banking institution, but eventually the financial cornerstone of the Bellamah empire. He also claimed among his holdings through his wholly owned corporations nine shopping centers, land developments throughout New Mexico and other Southwest states, the Evergreen Savings and Loan Association and related service companies in Chicago, the Grants State Bank, the Four Seasons Motor Inn in Albuquerque, the Rimrock Motor Inn in Farmington, Ramada Inn in Pueblo, Colorado, the Four Hills Mobile Home Park in Albuquerque, and the Mountain State Insurance Company and its Mountain States' Agencies.

The broad scope of his impact on Albuquerque's post-war growth is also reflected by his positions in the Albuquerque and National Home Builders Associations, and his service on boards of major Albuquerque banks, the Chamber of Commerce, the Presbyterian Hospital Center Foundation and his term on the City Planning Commission. As Harry E. Kinney said upon his death, Bellamah was "responsible as much as any citizen for the growth of the city." A colleague in real estate, Roger Cox said, "he was one of the most far-sighted people this city has ever known."³

EARLY LIFE

Because of his father's poor health, Bellamah was forced to quit school at 14 to take a job with his older brother Anise at the warehouses of the Santa Fe Railroad. He lied about his age to get the job paying only \$3 a day. "It seemed for a time as if my world had ended," Bellamah recalled. "The irresistible force of our poverty had darkened my dreams of being a lawyer—or so it seemed to me at the time. But luckily a spark of determination was still alive. I promised myself to succeed."⁴

Even though he continued to work full time because of the family's financial problems, he completed high school and studied law by correspondence. But just as he received his diploma for his law studies, a change in the licensing regulations stipulated that one must have a college degree to be a certified attorney. At 22, he enrolled in classes at the University of New Mexico. Because University officials refused to accept credits earned through high school correspon-

dence, he arranged with the registrar to enter as an adult student, with the agreement that he would take the necessary examinations at the University to cover his high school work. He simultaneously held two railroad jobs—the full-time position at the storehouse and another at the railroad's fire department which provided room, board and \$.50 night pay. Recalling those first years at the University, Bellamah said, "I often went 48 hours without sleep, and chewed sugar cakes to get energy during examinations."⁵

In 1938, as he was finishing his sophomore year, the Santa Fe Railroad laid him off. Anise, through his employers at Anchor Liquors, underwrote a retail liquor business for Bellamah to enable him to complete his education. The business was put in Dale's name to avoid a charge of conflict of interest; Anise was already engaged in the wholesale liquor trade. Anise recalls, "it was a brotherly agreement. I eventually paid off the loan for the store, but legally the store was Dale's, and it was that store which propelled him into the home building business after the war."⁶

Running the store and going to the University were time-consuming tasks which were greatly eased when he married Jeanne Lees in 1939, who assisted in the store's management. Based on advice from Arthur Bachechi, owner of Anchor Liquors, Dale obtained a sizeable loan from the Albuquerque National Bank to buy large stocks of liquor. The liquor was placed in a bonded warehouse; Bellamah could only remove portions of it as needed for his retail sales. The arrangement he had with the bank called for him to repay a portion of the loan before the liquor could be released from the warehouse. Richard Caponera, a liquor salesman, remembers that during World War II Bellamah had liquor that even the wholesalers couldn't obtain.⁷

In 1940 Bellamah graduated from the University of New Mexico. But before he could enroll in law school, he was drafted into the Army. His wife, Jeanne, ran the well-supplied store in his absence.

ENTRANCE INTO THE HOME BUILDING INDUSTRY

The liquor store had become a very profitable business; his foresight to buy quantities of select liquor paid lucrative dividends. With that money and the sale of the store in 1946 for an estimated

\$150,000 he initiated land purchases for a home building enterprise. Of the three homes he built that year, Bellamah remarked, "they produced practically no profit, but I was learning."⁸

In 1947 he formed a partnership with Fred Mossman, the superintendent at one of Bellamah's construction sites. "It was a partnership sealed with a handshake," says Mossman, "Dale knew very little about construction. He hardly knew a spike from a 2 by 4, but he had the business sense and that was his end of the bargain."⁹ In that same year, though a fledgling builder, he was selected by the City Commission from a field of 30 nominees to the seven-member City Planning Advisory Board. A year later, City Ordinance 647 created a permanent City Planning Commission composed of the original Advisory Board Members.

The initial period following World War II were extremely good years for home builders; the demand for housing after the war increased substantially. With an experienced partner in Fred Mossman, Bellamah's competence as a home builder became established. In 1948 Bellamah and Mossman built 100 homes in the Ridgecrest subdivision. Mossman recalls from those early years of their partnership that Bellamah had a compelling drive "to become the largest builder in New Mexico." By 1959 that dream was fulfilled beyond expectation: he was New Mexico's largest builder, accounting for an exceptional 28 percent of the state's total home market with home sales of almost \$20 million, and was ranked as the sixth largest builder in the world.

Between 1949 and 1959 he built more than 7,500 homes, 3,500 of which were located in eight Albuquerque subdivisions including Parkland Hills, Ridgecrest, Mesa Village, Kirtland, Bellehaven, and Princess Jeanne Park which was named for his wife. His first successful subdivision, Kirtland, was constructed in 1951 near the airport, and offered 500 homes in a price range of \$6,450 to \$8,200. His numerous land acquisitions for future development singled him out as a key figure in Albuquerque's greatest building boom. Of the leading builders during the decade of the 50s—Bellamah, Sam Hoffman, and Ed Snow—only Bellamah escaped financial disaster.

In response to Sam Hoffman's request to develop property in the then far Northeast section of Menaul and Wyoming, Hugh Woodward, an

original Planning Commission member, said, "you'll rue the day you develop this land. It will only become the abode of snakes and rabbits and will return to the desert."¹⁰ Bellamah argued that Albuquerque would grow to the East and thought that the greatest demand for houses would be in the low to middle price range.

"This decision as the means to achieve his goal as 'New Mexico's largest builder,' precipitated our break," Mossman declared. "We continued to remain close friends, but I wanted to build fewer higher priced quality homes, and Dale wanted to go the road of quantity in the low to middle price range."¹¹ Bellamah, as the corporation still contends today, did not believe that quality in their low to middle price range home was being sacrificed. He once said, "I know it sounds trite to say that quality is our basic selling point, but that is what we strive for, and not just quality from the standpoint of using the best materials, but also the quality of carefully conceived design and the quality of the special advanced features we include in our product."¹²

During the early building boom in Albuquerque, Bellamah was instrumental in the organization of the Albuquerque Home Builders Association in 1949. Subsequently, he and Mossman helped organize similar groups in Tucson and Phoenix. In 1950 he was elected regional Vice President of the National Association of Home Builders.

His large-scale development strategy provided a 100-house potential for the first year to help amortize the cost of setting up the framing and truss operation, followed by construction of a minimum of 50 houses per year for eight to ten years thereafter. The effectiveness of this principle was demonstrated in 1959 when 40 percent of the company's sales were re-sales to previous Bellamah homeowners. This approach was primarily employed in the Princess Jeanne Park development, his largest subdivision in Northeast Albuquerque with more than 5,000 homes which began in 1954. The original 327-acre tract, later expanded, was to include 1,600 homes.

Apart from these initial housing tracts, it was primarily because of his numerous land acquisitions that Bellamah's name emerged more frequently before the public of Albuquerque. One of his earliest public acquisitions of land was in Mesa

Village in 1950, a city tract of 320 acres located at Wyoming and Lomas. The tract was sold by the city to raise money for the construction of the new city auditorium. As a member of the Planning Commission he asked for its approval to purchase land in the tract. The Commission in noting that it would be a public sale with open competitive bidding, declared that any member of the Commission was free to participate in the bidding without violating any moral or ethical rule as a public officer.¹³ Bellamah and his partner, Fred Mossman, purchased close to 50 acres for more than \$50 thousand.

In 1955 Bellamah purchased three large parcels of land for headline prices: 160 acres in the Wyoming-Indian School area purchased from the University of New Mexico for \$425 thousand; 120 acres outside the city limits at Juan Tabo and Central for \$200 thousand; and 160 acres between San Pedro and Louisiana and south of Menaul (the Coronado Center area) for \$450 thousand cash.

SHOPPING CENTER DEVELOPMENT

For this latter parcel, he announced plans for construction of a regional shopping center on 80 acres, and high-density housing on the other 80 acres. Bellamah's announcement for the Coronado shopping center was accompanied by several others during a two-year period. The Tijeras Place Development Corporation asked for City Planning Commission approval of a \$5 million shopping center development on Central Avenue south of the new fair grounds in early 1955. Ed Snow announced plans for the Hoffmantown Center at Menaul and Wyoming. And UNM President Popejoy requested zoning changes for the Winrock Center to be leased by the Rockefeller Development Corporation. Three of the developments—Hoffmantown, Coronado, and Winrock—were to be located within one mile of each other.

Bellamah was not reappointed in 1956 to another nine-year term on the Planning Commission. Fred Mossman thought that, "his rapid ascendency in the home building industry and the perceived conflict of interest in the minds of some people made his reappointment unlikely."¹⁴

In February 1956 the City Planning Commission had framed and passed a zoning ordinance for Bellamah's shopping center. Although Bella-

mah's plans were approved, they encountered strong opposition from the Albuquerque Board of Realtors which objected to zoning changes until it could be clearly demonstrated that the changes were in the public interest.¹⁵ Bellamah would continue to disagree with the Board of Realtors, the city, and the University of New Mexico about land management practices.

University of New Mexico President Popejoy requested a zoning change for development of a shopping center on 140 acres of land located southeast of Bellamah's on Louisiana Boulevard. Popejoy said in 1957 that the University needed the income from the lease of the property. (By 1962 the land had netted more than \$200 thousand for the University, and by 1980, when the buildings would be paid off, the University would receive \$250 thousand annually for 50 years with options for renewal for another 50 years.)

Because Bellamah was no longer a member of the Planning Commission, he vigorously opposed the Winrock zoning change. He claimed that his objections were not based on Winrock's prospective competition with his shopping center, but rather that Winrock would damage his proposed high-density residential development adjacent to the University's land. He stated, "It has been said the proper concept of zoning was to keep the kitchen stove out of the living room—if the center zoning is approved we will have not only the kitchen stove but the bathtub and the refrigerator in the living room. And if this zoning is approved, zoning as it was intended would be dead. We would not be able to convince eastern investors that residential mortgages are secure, and that the Albuquerque zoning ordinance offered them any measure of protection."¹⁶

It is interesting to note that his shopping center also was adjacent to other developers' "residential areas." The Board of Realtors' opposition to his shopping center proposal in 1955 was based on similar concerns. Nevertheless, the proposed Winrock Center was approved.

In 1958, Bellamah purchased 810 acres on the eastern fringes of the city for \$956 thousand. The Bellehaven residential area opened in 1959 along with the Princess Jeanne development. Dietz Farm's 150 acres were purchased for \$500 thousand and Northdale and Eastdale Shopping Centers were planned for construction. In 1962, 40

acres of the original 160 acres for his residential/shopping center development were sold for the construction of a Sears and Roebuck store. Sears represented the first major store of what was to become Albuquerque's ultra-modern shopping center, far outstripping the older Winrock Center. Bellamah accurately predicted that "with the development to the north of the city, this complex (Coronado Center) will be in the exact center of a tremendous consolidated area."¹⁷ In the present era of environmental concern, the Winrock-Coronado area has achieved the highest smog concentration in Albuquerque.¹⁸

HOTEL ENTERPRISES

He purchased 11½ acres in 1966 for \$335 thousand at the junction of the Carlisle Boulevard off-ramp (one of the 10 exits from Interstate 40) and Interstate 40. The proposed first phase of the \$4 million-plus, 200-room motor hotel was an unfamiliar risk. However, the risk was minimized by at least two factors: a friendship with Wallace Johnson, the founder and developer of Holiday Inns, and a previous purchase of a 140-room hotel in Pueblo, Colorado. In the first instance, Bellamah derived basic information and wisdom about the operation of a hotel from Wallace Johnson. In the second instance, he gained practical experience from the renovation and management of an existent hotel in Pueblo, Colorado.

In addition to these sources of the expertise, Bellamah also learned to draw on the expertise of consultant and management firms specializing in the hotel industry. "Before we started on the new Four Seasons Motor Inn," he said, "we retained the Dallas firm of Ron Walters Associates to do a survey of sites to pick the best motel location in the city and provide us with a concept and feasibility study for a facility in Albuquerque."¹⁹ Based in large part on this study, an appropriate location was designated at the Carlisle off-ramp. The 11½ acres was land that had been assembled for the off-ramp from the Interstate, but was determined to be in excess of that requirement. Bellamah purchased the land at a public auction by the State Highway Department.

Bellamah considered the Four Seasons his personal triumph; at the time of his death, he was in the process of completing a 4,000 square foot apartment at the motel for himself.

CONVENTION CENTER LOCATION DEBATE

In 1968 Bellamah proposed that 100 acres of the "Coronado Center" parcel, be devoted to the city's convention center. He initially made 10 acres of the parcel available to the city at a price below market value. That offer initiated an intense controversy about the site of the city's convention center—downtown or in the Coronado/Winrock area. In 1969, Bellamah offered to donate the 10-acre parcel as a free gift. He charged that the proposed development of the downtown site was a "wanton waste of \$3,000,000 in taxpayer's money."²⁰ The City Council Chairman, Pete Dominici, declared, "We haven't found a successful convention center in the southwest or midwest located anywhere but downtown."²¹ In April 1969, Bellamah's offer was declined, and a downtown site was selected.

His vision of a multi-use civic development, however, was not deterred. In 1971 he announced plans to build "uptown Albuquerque," a \$122 million development to include two 14-story hotels with a total of 864 rooms, 14 separate apartment buildings ranging from 7 to 17 stories, 150 thousand square feet of department stores, and several high-rise office buildings and related parking facilities. In 1979 this tract of land was named "Jeannedale" is moving toward completion.

In recalling Bellamah's mark on Albuquerque, Ed Boyle, President of the Bellamah Corporation says, "he had a great business sense and far-sighted vision for Albuquerque's continued growth, but by focusing primarily on his business philosophy, his publicized land purchases and his outspokenness in public debate (e.g., Winrock and the Convention Center) obscures the warm human personality he equally possessed."²²

When he died in 1972, his estate, valued at between \$30-\$50 million, was placed in a foundation which bears his name for both charitable and educational causes. Since 1972, money has been expended for such projects as the Casa Angelica Hospital, U.S. Olympic Committee, University of New Mexico, and New Mexico State University Scholarship Funds, the University's Law School addition and the Massachusetts General Hospital Cancer Research Center.

He said two years before his death when reflecting on his "rags to riches" fortune, "dreaming is a great factor in the purchase of land; don't look at the property as it is but as it could be. And once you have decided that you can make it that way, go ahead with the purchase."²³ He dreamed, carefully calculated, sought out counsel, gave advice, debated his views, and at times even lost, but he purchased and built on vast tracts of property which left his mark upon post-war Albuquerque.

FOOTNOTES

1. William D. Angel, Jr., "To Make A City: Entrepreneurship on the Sunbelt Frontier," *The Rise of the Sunbelt Cities*, Perry, David C. and Watkins, Alfred, Beverly Hills, Ca., Sage Publications, 1977, p. 109.
2. *Ibid.*
3. *Albuquerque Journal*, Albuquerque, N.M., April 20, 1970, p. 1.
4. *Sun News*, Las Cruces, N.M., March 26, 1961, p. 20.
5. *Albuquerque Tribune*, Albuquerque, N.M., June 2, 1960, p. B1.
6. Interview, Anise Bellamah, Roswell, N.M., March 16, 1979.
7. Interview, Richard Caponera, Albuquerque, N.M., March 20, 1979.
8. *Albuquerque Tribune*, Albuquerque, N.M., June 2, 1960, p. B1.
9. Interview, Fred Mossman, Albuquerque, N.M., March 23, 1979.
10. Interview, Mervin C. May, Albuquerque, N.M., March 26, 1979.
11. Interview, Fred Mossman, *op. cit.*
12. "Rags to Riches Formula," *This Earth*, Oakland, California, July 1960, p. 15.
13. City of Albuquerque Planning Commission Minutes, November 9, 1950.
14. Interview, Fred Mossman, *op. cit.*
15. City of Albuquerque Planning Commission Minutes, December 19, 1955.

16. *Albuquerque Journal*, Albuquerque, N.M., September 12, 1957, p. 1.
17. *Albuquerque Tribune*, Albuquerque, N.M., January 26, 1962, p. 1.
18. Robert Seward, Environmental Politics Seminar, Fall, 1978.
19. "Hotel Purchase Put Builder in New Field," *Journal of Homebuilding*, May, 1971, p. 68-71.
20. *Albuquerque Tribune*, Albuquerque, N.M., February 19, 1969, p. D4.
21. *Albuquerque Journal*, Albuquerque, N.M., March 8, 1969, p. 2.
22. Interview, Ed Boyle, President of Bellamah Corporation, Albuquerque, N.M., March 20, 1979.
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Current Economic Developments in New Mexico

MONTHLY SUMMARY

LEO W. CARBAJAL

A majority of economic forecasts indicate that the current national recession will continue through the end of the year. Most economists see the magnitude of the current recession as mild compared to the 1974-75 recessionary period. Prognostications of a mild recession are based upon certain assumptions such as the mild slump in housing to date, robust business capital expenditures, and no substantial buildup of business inventories. However, data from the Department of Commerce shows that personal income in August rose \$8.4 billion—the smallest monthly gain of 1979 and an increase which is less than half the rate at which prices have been rising. At the same time, industrial production declined a seasonally adjusted (SA) 1.1 percent in August, indicating that manufacturers are reducing surplus inventories. Therefore, a reduction in consumer spending because of a decline in real purchasing power and/or rapid growth of inventories in the coming months could prolong and intensify the present recession.

The New Mexico economy continues to demonstrate moderate growth. In general, however, results were mixed in certain sectors during July. While the number of persons in the labor force rose a slight 0.1 percent (SA) in July, total employment increased to 512,200 (SA), representing a 0.4 percent (SA) increase from June to July. Total unemployment fell 4.8 percent (SA) during the same period. Consequently, the state's monthly unemployment rate declined to 5.5 percent (SA). In contrast, new unemployment insurance claims registered a 1.1 percent (SA) increase.

Economic activity in the construction sector was also mixed. Most statistics were down in July

compared to totals for June. Residential building permits recorded a 6.2 percent (SA) drop and residential construction contracts fell 2.4 percent (SA), indicating a possible slowdown in the housing industry as the recession continues and interest rates climb. However, the number of nonresidential construction contracts rose a substantial 164.5 percent from the June level and 102.7 percent from the July 1978 figure.

The financial sector recorded an increase in general activity with new bank loans up 11.8 percent (SA) in July, time deposits up 3.2 percent, and new savings and loans received increasing 61.3 percent. Two categories showed declines: bank demand deposits fell 5.3 percent and bank debits decreased 17.8 percent (SA).

Employment in wholesale trade, retail trade, and in transportation, communications, and utilities sectors remained relatively stable in July. A modest decline of 0.9 percent (SA) was registered in manufacturing employment. Reflecting the adverse effect of soaring energy costs upon the state's tourism industry, employment in services and lodging declined in July by 0.3 percent (SA) and 3.2 percent (SA), respectively. Related to the declines in service and lodging employment is the 11.7 percent (SA) drop in the number of visits to national parks in New Mexico.

In summary, the general consensus among economists is that the U.S. economy will continue to experience a mild recession through the remainder of the year, with a steadily improving trend beginning in mid-1980. For New Mexico, statewide economic growth should remain moderate, with the trade and services sectors of the economy feeling the impact of inflation-reduced consumer spending power.

ECONOMIC INDICATORS

	Quarterly Averages			
	1978		1979	
	Third Quarter	Fourth Quarter	First Quarter	Second Quarter
1. GENERAL				
Civilian Labor Force ¹ (000)	536.6	534.8	525.0	544.1
Seasonally Adjusted*	527.7	534.0	538.9	540.4
Total Employment ¹ (000)	507.0	506.0	493.5	514.4
Seasonally Adjusted*	497.6	504.5	508.9	510.5
Unemployment ¹ (000)	29.5	28.8	31.6	29.7
Seasonally Adjusted*	30.2	29.6	30.0	29.9
Unemployment Rate (%)	5.5	5.4	6.0	5.5
Seasonally Adjusted*	5.7	5.5	5.6	5.5
Weekly New Unemployment Insurance Claims	1,144.0	1,302.7	1,436.0	1,171.7
Seasonally Adjusted*	1,268.7	1,259.3	1,236.4	1,294.1
Nonagricultural Wage/Salary Employment ² (000)	452.9	455.4	449.9	465.8
Seasonally Adjusted*	448.3	454.5	458.4	463.0
New Business Incorporations	254.3	201.7	237.7	na
Business Failure Liabilities (\$000)	0.0	0.0	58.0	na
2. AGRICULTURAL RECEIPTS				
From Livestock and Products (\$ mil.)	na	na	na	na
Seasonally Adjusted*	na	na	na	na
From Crops (\$ mil.)	na	na	na	na
Seasonally Adjusted*	na	na	na	na
3. MINING PRODUCTION				
Petroleum (000 bbls.)	6,903.0	6,827.3	6,454.2	na
Natural Gas (bil. cu. ft.)	94.0	97.9	95.7	na
Seasonally Adjusted*	96.7	96.1	93.7	na
Copper Ore (000 tons)	10.6	11.9	13.8	16.6
Coal Production (000 short tons)	1,084.0	1,053.0	1,033.3	978.3
4. CONSTRUCTION				
Residential Building Permits (\$ mil.)	28.9	20.7	24.8	30.1
Seasonally Adjusted*	28.8	24.3	24.1	26.5
Residential Construction Contracts (\$ mil.)	42.6	33.9	40.2	48.8
Seasonally Adjusted*	42.9	40.7	38.1	43.0
Nonresidential Construction Contracts (\$ mil.)	17.4	24.7	16.1	26.0
Nonbuilding Construction Contracts (\$ mil.)	24.8	17.1	18.2	15.3
5. MANUFACTURING				
Employment ² (000)	33.7	34.1	34.1	35.1
Seasonally Adjusted*	33.3	33.6	34.8	35.2
Average Weekly Hours	38.5	38.9	39.6	39.5
Seasonally Adjusted*	38.6	38.4	39.9	39.7

ECONOMIC INDICATORS (continued)

			Percentage Change				Percentage Change		
1979			III 1977- III 1978	IV 1977- IV 1978	I 1978- I 1979	II 1978- II 1979	May 78- May 79	June 78- June 79	July 78- July 79
May	June	July							
543.5	556.4	554.0	3.4	3.5	4.3	3.6	3.9	3.6	3.1
541.3	541.5	541.8	3.3	3.5	4.4	3.6	3.9	3.6	3.1
516.0	522.1	523.5	5.3	4.9	4.7	3.8	4.2	3.6	3.2
511.4	510.4	512.2	5.4	4.9	4.7	3.8	4.2	3.6	3.2
27.5	34.3	30.5	- 21.9	- 15.5	- 1.0	- 0.2	- 1.4	3.0	0.3
29.9	31.1	29.6	- 21.9	- 15.6	- 1.0	- 0.3	- 1.5	3.2	0.4
5.1	6.2	5.5	- 24.3	- 18.2	- 4.7	- 2.8	- 3.8	0.0	- 3.5
5.5	5.8	5.5	- 24.5	- 18.4	- 5.1	- 3.6	- 5.1	- 0.3	- 2.5
1,028.0	1,261.0	1,256.0	- 3.0	7.4	5.8	0.7	- 12.0	2.9	7.3
1,243.1	1,309.5	1,323.5	- 2.7	7.1	5.0	0.3	- 12.0	3.1	7.4
466.4	470.7	468.8	6.9	6.4	5.5	4.9	5.4	4.5	3.9
463.6	463.3	464.2	7.0	6.4	5.5	4.9	5.4	4.5	3.9
271.0	na	na	32.9	22.7	26.9	na	47.3	na	na
na	na	na	-100.0	-100.0	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
6,749.6	na	na	- 3.9	- 6.1	- 7.7	na	- 5.0	na	na
97.7	na	na	- 0.9	- 1.5	- 2.8	na	2.9	na	na
97.6	na	na	- 1.0	- 1.3	- 2.8	na	2.9	na	na
18.5	16.1	na	- 16.6	- 19.1	3.8	47.2	60.0	48.3	na
1,210.0	953.0	671.0	8.4	20.8	3.7	- 0.2	32.4	- 13.1	- 26.2
28.7	33.3	28.2	11.8	- 3.0	- 7.9	- 1.0	- 10.2	20.5	7.3
25.3	29.2	27.4	11.3	- 3.4	-10.3	- 0.5	- 9.5	21.0	7.3
51.6	46.3	45.8	- 10.7	- 16.1	7.2	9.7	43.3	- 24.7	1.5
44.1	41.5	40.5	- 12.1	- 14.3	7.2	9.0	42.0	- 24.5	1.0
22.7	18.6	49.2	- 12.0	2.0	- 1.9	84.6	81.8	- 10.2	102.7
7.6	31.3	21.0	- 8.2	- 8.4	1.5	- 58.4	- 67.0	- 41.8	- 13.4
35.0	35.3	34.9	3.5	2.5	4.9	6.6	7.7	6.0	4.8
35.3	35.1	34.8	3.6	2.5	4.9	6.5	7.7	6.0	4.9
40.0	39.5	39.3	- 1.3	- 3.3	- 0.7	0.6	2.0	1.0	2.3
40.1	39.7	39.5	- 1.3	- 3.3	- 0.8	0.6	2.0	1.1	2.5

ECONOMIC INDICATORS (continued)

	Quarterly Averages			
	1978		1979	
	Third Quarter	Fourth Quarter	First Quarter	Second Quarter
6. <u>TRANSPORT./COMMUNIC./UTIL.</u>				
Employment ² (000)	26.8	27.9	27.9	27.9
7. <u>TRADE</u>				
Wholesale Employment ² (000)	20.4	20.7	20.8	21.3
Retail Employment ² (000)	83.2	83.9	82.5	85.7
Seasonally Adjusted*	81.3	83.2	85.3	85.6
Average Weekly Hours	36.3	35.4	34.5	35.2
8. <u>FINANCE</u>				
Bank Debits (\$ mil.)	3,297.9	3,470.6	5,907.3	10,958.6
Seasonally Adjusted*	3,310.1	3,519.4	5,997.3	10,891.2
New Bank Loans (\$ mil.)	241.4	267.5	235.1	252.7
Seasonally Adjusted*	250.3	258.9	235.5	256.3
Bank Demand Deposits (\$ mil.)	1,047.6	1,060.0	962.5	1,041.7
Bank Time Deposits (\$ mil.)	1,633.6	1,679.4	1,712.5	1,772.1
Total Savings Deposits (Savings and Loan Assoc.) (\$ mil.)	1,653.0	1,712.4	1,779.1	1,814.3
New Savings and Loans Received (\$ mil.)	99.5	101.1	118.2	115.4
9. <u>SERVICES AND TOURISM</u>				
Service Employment ² (000)	91.0	88.3	84.3	89.6
Seasonally Adjusted*	87.9	90.0	86.8	88.5
Lodging Employment ² (000)	10.0	9.1	8.9	9.6
Seasonally Adjusted*	9.2	9.5	9.4	9.5
Visits to National Parks/Monuments (000)	269.8	79.0	95.3	199.9
Seasonally Adjusted*	158.8	145.0	179.3	164.0
10. <u>GOVERNMENT</u>				
Federal Employment ² (000)	35.5	35.1	35.9	37.1
State Employment ² (000)	31.3	33.7	33.7	33.4
City and County Employment ² (000)	48.1	49.8	50.8	51.3

* Seasonally adjusted figures are economic time series which have had seasonal variations removed with statistical processes. These purely seasonal variations include the effects of: the opening and closing of school, the annual pattern of seasons (especially applicable to agricultural data), holidays, and other annually recurring events which influence economic activity. By removing these seasonal variations from raw economic data, month-to-month analysis of trends and unusual fluctuations in economic activity is facilitated.

na Not available.

1 Number of persons by place of residence.

2 Number of jobs by place of work.

ECONOMIC INDICATORS (continued)

May	1979		Percentage Change				Percentage Change		
	June	July	III 1977- III 1978	IV 1977- IV 1978	I 1978- I 1979	II 1978- II 1979	May 78- May 79	June 78- June 79	July 78- July 79
28.3	27.6	27.6	9.5	10.2	8.7	6.6	6.8	5.8	4.9
21.3	21.6	21.7	6.4	6.7	8.2	7.0	7.0	6.9	6.4
85.7	87.0	87.1	4.9	5.8	6.6	5.4	5.7	5.2	5.5
85.4	85.4	85.4	5.0	5.8	6.5	5.4	5.7	5.2	5.5
35.0	35.8	35.0	0.5	- 1.1	- 2.9	- 1.3	- 1.7	- 0.8	- 4.6
11,591.4	11,571.1	10,093.9	19.1	27.9	86.0	272.7	284.4	270.4	205.6
11,690.4	11,506.1	9,460.1	21.0	27.6	86.7	273.5	289.0	285.1	195.3
255.4	248.3	279.2	9.3	10.4	- 0.1	0.1	3.3	- 12.1	20.0
256.3	260.0	290.6	11.5	10.8	0.0	0.0	5.5	- 10.3	15.6
1,030.0	1,075.6	1,018.4	12.7	10.6	0.1	3.3	4.3	3.8	- 1.9
1,791.1	1,761.7	1,817.2	12.2	10.8	10.8	11.9	12.3	10.8	11.7
1,807.8	1,830.6	1,832.1	18.1	18.0	17.0	14.7	14.8	13.6	12.1
114.9	107.3	173.1	30.1	44.1	24.1	26.1	35.8	6.1	58.0
88.9	92.7	93.2	8.9	8.0	2.2	2.5	2.7	2.2	1.4
88.8	88.6	88.3	9.0	8.0	2.2	2.4	2.6	2.2	1.4
9.5	9.9	9.9	1.7	5.5	4.4	3.7	4.4	1.0	- 1.0
9.5	9.3	9.0	1.8	5.5	4.3	3.7	4.3	1.0	- 1.0
172.7	244.9	273.4	- 2.1	- 20.4	- 7.6	2.6	- 4.9	- 9.7	- 28.3
149.9	134.0	118.3	- 2.4	- 23.0	-11.7	8.1	- 6.8	- 10.5	- 28.3
36.9	37.7	37.8	2.0	2.2	5.2	5.4	4.8	5.9	5.9
34.7	30.9	31.0	7.7	12.1	10.0	6.7	8.8	3.0	0.3
51.3	51.3	48.4	5.4	1.8	2.0	2.0	1.4	2.8	2.3

Sources: New Mexico Department of Human Services, Employment Services Division: Sections 1,5,6,7,9,10; Dun and Bradstreet, Inc.: Section 1; USDA Statistical Reporting Service: Section 2; Oil Conservation Commission: Section 3; New Mexico Bureau of Revenue: Section 3; Building Inspectors' reports, 18 cities: Section 4; F.W. Dodge Co. (a division of McGraw-Hill, Inc.): Section 4; Federal Power Commission: Section 6; Bank reports (36): Section 8; Federal Home Loan Bank of Little Rock: Section 8; United States Department of the Interior, National Park Service: Section 9.

VALUE OF BUILDING PERMITS--SELECTED CITIES

	Residential				Nonresidential			
	July	July	Cumulative Total		July	July	Cumulative Total	
	1978	1979	1978	1979	1978	1979	1978	1979
Alamogordo	\$ 527,042	\$ 446,976	\$ 3,929,542	\$ 4,561,476	\$ 385,700	\$ 44,216	\$ 1,075,275	\$ 591,815
Albuquerque	16,932,588	18,939,358	113,945,376	122,396,321	2,371,615	4,698,914	21,997,181	35,047,131
Artesia	301,006	362,000	1,170,706	1,415,000	2,400	16,600	51,450	988,565
Carlsbad	383,400	85,600	5,143,035	1,605,650	130,000	40,000	1,104,000	1,545,540
Clayton	85,740	0	327,613	225,120	0	0	9,600	115,000
Clovis	439,526	560,275	4,615,541	3,920,148	31,464	445,476	948,607	1,483,528
Deming	167,000	154,000	2,176,800	1,481,000	0	871,000	225,000	927,900
Farmington	1,241,611	1,195,386	9,185,505	6,878,146	752,927	849,002	6,943,280	3,916,307
Gallup	143,838	534,095	2,985,810	3,157,779	410,150	3,903,400	1,571,812	5,312,030
Grants	465,700	502,525	2,735,320	2,969,705	2,952,000	343,000	7,949,360	663,700
Hobbs	743,250	646,000	6,815,800	4,657,250	1,023,000	110,000	3,097,875	1,654,860
Las Cruces	956,480	1,126,850	13,682,534	14,072,560	2,619,437	242,000	8,353,519	1,853,050
Las Vegas	113,732	200,759	1,550,083	631,715	0	183,378	0	1,344,659
Lordsburg	0	0	4,450	55,500	0	0	284,200	73,500
Portales	110,000	25,000	990,390	999,500	0	20,000	476,500	460,300
Raton	96,285	88,920	1,484,878	391,065	902,500	70,000	950,070	360,000
Roswell	576,700	974,500	7,556,809	6,910,589	223,700	75,400	1,714,470	938,502
Santa Fe	2,906,848	2,293,800	19,455,842	16,130,237	1,042,457	233,000	4,285,254	2,350,800
Tucumcari	38,000	63,000	293,467	231,500	15,000	0	28,692	1,348,002
TOTAL	\$26,278,746	\$28,199,044	\$198,049,501	\$192,590,261	\$12,862,350	\$12,145,386	\$61,066,145	\$60,975,189

Source: Individual reports by city building inspectors.

ESTIMATED CIVILIAN LABOR FORCE AND EMPLOYMENT

	New Mexico			Albuquerque SMSA ¹		
	July 1978 ^r	June 1979 ^r	July 1979 ^p	July 1978 ^r	June 1979 ^r	July 1979 ^p
TOTAL CIVILIAN LABOR FORCE	537,500	556,400	554,000	196,700	204,600	203,600
Employment ²	507,100	522,100	523,500	185,700	192,100	192,500
Unemployment	30,400	34,300	30,500	11,000	12,500	11,100
Percentage of Labor Force	5.7	6.2	5.5	5.6	6.1	5.5
Nonagricultural Wage and Salary Employment	451,100	470,700	468,800	180,200	186,600	186,600
Mining	25,100	27,000	27,300	na	na	na
Contract Construction	37,500	38,200	38,300	16,200	15,900	16,200
Manufacturing	33,300	35,300	34,900	17,200	17,900	17,900
Durable Goods	19,400	20,600	20,700	11,700	12,500	12,500
Nondurable Goods	13,900	14,700	14,200	5,500	5,400	5,400
Transportation and Public Utilities	26,300	27,600	27,600	10,100	11,000	11,100
Trade	103,000	108,600	108,800	45,500	47,700	47,700
Wholesale	20,400	21,600	21,700	12,200	12,900	13,000
Retail	82,600	87,000	87,100	33,300	34,800	34,700
Finance, Insurance and Real Estate	20,100	21,400	21,500	10,200	11,000	11,100
Services and Miscellaneous	91,900	92,700	93,200	41,200	42,200	42,100
Government	113,900	119,900	117,200	39,800	40,900	40,500
Federal	35,700	37,700	37,800	12,400	12,600	12,500
State	30,900	30,900	31,000	9,800	9,500	9,700
Local	47,300	51,300	48,400	17,600	18,900	18,300

na Not available, less than 50 jobs.

p Preliminary.

r Revised.

¹ Albuquerque Standard Metropolitan Area includes Bernalillo and Sandoval Counties.² Includes labor disputes.

Source: New Mexico Employment Security Department.

ALBUQUERQUE¹ BANKING DATA (\$000s)

			% Change
	July 1978	July 1979	July 1978- July 1979
BANKS			
Bank Debits	\$2,364,235.3	\$8,912,195.0	277.0
New Loans & Discounts	123,774.3	153,902.9	24.3
Demand Deposits	539,115.4	517,776.6	- 4.0
Time Deposits	799,496.8	905,579.7	13.3
SAVINGS & LOANS			
Savings Deposits	\$ 738,700.0	\$ 824,900.0 ^p	11.7
New Savings Received	59,400.0	86,900.0 ^p	46.3

p Preliminary.

¹ Bernalillo County for bank information, Albuquerque SMSA for savings and loan data.

Source: Five reporting banks and Federal Home Loan Bank of Little Rock.

CONSUMER PRICE INDEXES AND INDEXES OF SELECTED CATEGORIES U.S. City Average (1967=100)

	All Urban Consumers				Revised Series, Wage Earners and Clerical Workers			
			% Change				% Change	
	June 1979	July 1979	Jul. 78- Jul. 79	Jun. 79- Jul. 79	June 1979	July 1979	Jul. 78- Jul. 79	Jun. 79- Jul. 79
ALL ITEMS	216.6	218.9	11.3	1.1	216.9	219.4	11.5	1.2
Food	235.4	236.9	10.2	0.6	235.4	237.1	10.4	0.7
Housing	225.5	228.4	12.1	1.3	225.5	228.4	12.2	1.3
Apparel & Upkeep	165.7	164.3	4.0	-0.8	165.3	164.5	4.0	-0.5
Transportation	212.6	216.6	15.7	1.9	213.7	217.8	16.0	1.9
Medical Care	237.7	239.9	9.3	0.9	238.2	240.5	9.6	1.0
Entertainment	188.2	189.1	6.8	0.5	187.5	188.6	7.0	0.6
Other Goods & Services	194.5	195.2	6.6	0.4	194.3	195.1	6.2	0.4

Source: U.S. Department of Labor, News.

HOURS AND EARNINGS OF PRODUCTION, CONSTRUCTION AND NONSUPERVISORY EMPLOYEES New Mexico

	Average Weekly Hours		% Change	Average Hourly Earnings		% Change
	July 1979 ^p	June 1979	July 1978	July 1979 ^p	June 1979	July 1978
Mining	44.6	45.7	44.7	\$8.16	\$8.16	\$7.46
Construction	34.8	35.4	37.1	8.63	8.75	8.11
Manufacturing	39.3	39.5	38.4	5.45	5.25	4.90
Durable Goods	40.7	40.8	38.9	5.83	5.64	5.25
Nondurable Goods	37.0	37.5	37.6	4.76	4.57	4.34
Communication & Utilities	42.0	42.2	41.7	7.09	7.12	6.77
Trade ¹	35.0	35.8	36.7	5.44	5.52	4.97
Banking	42.5	40.8	41.1	3.65	3.63	3.41

p Preliminary.

¹ Excludes eating and drinking places.

Source: New Mexico Employment Security Department.

ALBUQUERQUE FOOD PRICE INDEX: AUGUST 1979

June 1974 = 100(all items)

	Aug. 79 Index	June 74 Aug. 79	% Change	
			Aug. 78 Aug. 79	July 79 Aug. 79
ALL FOOD ITEMS	151.4	51.4	10.7	-1.2
Cereals & Baked Products	135.7	35.7	12.8	0.9
Meat, Fish, Poultry	160.8	60.8	12.1	-5.6
Fruits and Vegetables	156.0	56.0	14.2	3.0
Dairy Products	136.0	36.0	12.0	2.8
Other Food Items	152.5	52.5	4.2	-1.0

Food Items	Quantity	August 1979		% Change		
		Price	Index	June 74 Aug. 79	Aug. 78 Aug. 79	July 79 Aug. 79
Flour, all purpose	5 lb	\$1.02	88.4	- 11.6	6.6	- 2.0
Corn Flakes	12 oz	.62	160.0	60.0	4.3	1.0
Bread, white	1b	.50	141.3	41.3	27.2	2.2
Cookies, cream	16 oz	1.04	132.8	32.8	- 2.3	- 1.0
Hamburger	1b	1.54	177.7	77.7	28.4	- 5.6
Round steak, bone-in	1b	2.24	178.7	78.7	16.3	- 9.2
Sirloin steak, boneless	1b	2.55	147.2	47.2	8.5	-12.3
Chuck roast, blade	1b	1.70	224.4	124.4	32.6	- 4.5
Beef liver	1b	1.31	140.3	40.3	50.3	- 1.0
Pork chops	1b	2.10	148.8	48.8	- 4.1	-10.0
Bacon, sliced	1b	1.88	163.3	63.3	- 8.0	- 4.7
Pork roast, loin	1b	1.74	128.3	28.3	4.7	2.9
Frankfurters	1b	2.07	164.3	64.3	15.6	- 4.5
Fryers, whole	1b	.60	119.9	19.9	- 2.2	- 6.8
Tuna, light chunk	6 oz	.89	153.7	53.7	1.8	- 5.7
Bananas	1b	.32	157.4	57.4	28.7	- 5.9
Oranges	dozen	1.78	200.6	100.6	5.2	-12.6
Lettuce	1b	.71	163.8	63.8	112.9	82.4
Potatoes, except baking	10 lb	1.14	59.3	- 40.7	- 1.4	-17.1
Tomatoes	1b	.70	133.0	33.0	66.6	43.4
Carrots	1b	.46	198.7	98.7	23.8	52.1
Onions, yellow	1b	.18	126.7	26.7	- 8.9	-40.8
Fruit cocktail	#303	.67	179.1	79.1	18.8	13.6
Tomatoes, canned	#303	.55	169.0	69.0	10.9	0.6
Peas, canned	#303	.45	150.7	50.7	4.2	1.2
Frozen orange juice	6 oz	.50	185.6	85.6	- 5.6	- 2.9
Frozen broccoli spears	10 oz	.53	129.9	29.9	- 15.9	- 9.0
Milk	quart	.52	125.8	25.8	12.4	3.5
Evaporated milk	13 oz	.45	151.4	51.4	12.9	- 0.9
Ice cream	1/2 gal	1.60	137.7	37.7	6.5	- 1.0
Cheese, sliced	6 oz	.95	159.8	59.8	15.3	6.4
Eggs, AA large	dozen	.77	127.1	27.1	- 2.1	- 3.6
Margarine	1b	.73	120.2	20.2	6.8	- 1.1
Sugar	5 lb	1.30	90.3	- 9.7	0.2	- 1.6
Coffee	1b	3.22	249.2	149.2	- 1.7	1.8
Instant coffee	6 oz	3.36	212.2	112.2	- 0.4	4.1
Cola drink	10 oz ctn	1.23	157.0	57.0	2.4	-14.2
Chicken noodle soup	10 oz	.29	129.3	29.3	0.5	0.3
Baby food, strained	4 oz	.24	180.2	80.2	20.6	0.7
Frozen french fries	9 oz	.45	209.7	109.7	26.5	15.4

na Not available.

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Educational Attainment in New Mexico, the Mountain States, and the United States, 1970 and 1976

CRAIG R. LUNDAHL

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Probably one of America's greatest achievements is the ever increasing level of education of its population. In 1970, 59.5 million Americans were going to school. Of this, 51.2 million were white, 7.4 million black, and 3.2 million shared a Spanish heritage.

The 1970 Census showed many things about our educational attainment.

- A greater proportion of Americans than ever before were going to school.
- Americans were starting school at an earlier age and staying longer.
- For the first time in American history, the average American adult in 1970 had completed high school.
- People living in urban areas had a higher level of education than those living in rural areas.
- Although a higher percentage of whites finished high school than blacks or those of Spanish ancestry, these minorities were closing the gap.
- A definite relationship was evident between level of education and the kinds of jobs people held and how much they were paid.

This article examines the changes in educational levels attained in New Mexico, the Mountain States, and the United States from 1970 to 1976.

DATA INFORMATION AND DEFINITIONS

The data reviewed here were collected by the Bureau of the Census, a federal agency of the Department of Commerce, for the 1970 Census and for the Survey of Income and Education in

1976. These are the latest data available which deal with educational attainment.

The estimates for the Survey of Income and Education are based on data collected from personal interviews conducted mostly in May and June of 1976, with a small number occurring in April and July. A sample of 158,500 households, selected independently in the 50 states and the District of Columbia, were eligible for interview in the survey. Since the data presented are based on a sample, they are subject to sampling variability which may be relatively large for the smaller figures and for small differences between figures. Comprehensive discussions of the sampling variability and the sample design are found in *Current Population Reports*, Series P-20, No. 334.

The estimates pertaining to the 1970 population are based on either the 20 percent, 15 percent, or 5 percent sample data collected in April 1970 for the Decennial Census of Population and Housing. A detailed description of the sampling variability and the sample design can be obtained in the 1970 Census reports PC(1), *Detailed Characteristics*, for each state.

The term "educational attainment" refers only to progress in "regular" schools. Such schools include graded public, private, and parochial elementary and high schools (both junior and senior high), colleges and universities, and professional schools, whether day schools or night schools. Thus, regular schooling is that which may advance a person toward an elementary school certificate or high school diploma, or a college, university, or professional school degree. Schooling in other

than regular schools was counted only if the credits obtained were regarded as transferable to a school in the regular school system.

The median years of school completed is defined as the value which divides the population into two equal parts—one-half having completed more schooling and one-half having completed less schooling than the median.

High school graduates are persons who have completed four years of high school, including persons who have completed some college.

EDUCATIONAL ATTAINMENT

The results of the 1976 Survey of Income and Education show continued increases in the educational attainment levels of the American population during the early part of the 1970s. From 1970 to 1976, the proportion of the United States population 18 years of age and over with at least a high school education rose from 56 percent to 67 percent. The percentage of adults who were college graduates also increased substantially at the national level—from 10 percent in 1970 to 14 percent in 1976. This trend was also evident in most states. Table 1 shows the years of school completed by persons 18 years old and over for the regions of the United States and the United States, as well as the median school years com-

pleted and the percentage of high school graduates between 1970 and 1976.

Table 1 indicates that the levels of educational attainment varied considerably in 1976 among the four major geographic regions of the United States. The proportion of high school graduates reported in the West was substantially higher than that reported for the South. However, the percentage increase since 1970 was greater in the South than in any other region and smallest in the West. In both the Northeast and the North Central regions, median school years completed rose from 12.2 to 12.5 years from 1970 to 1976, and ranked third and second, respectively, behind the West in the proportion of adult population with a high school education.

In the Mountain States, as shown in Table 2, there was an overall increase of 0.3 years of schooling completed by those 18 years of age and over from 1970 to 1976. The percentage of males 25 years old and over who completed high school increased from 60.3 in 1970 to 72.9 in 1976—an increase of 12.6 percent. A 9.9 percent increase was evident for females—from 62.2 percent in 1970 to 72.1 percent in 1976. The percentage of males 18 to 24 years old who completed high school increased from 75.3 percent in 1970 to 81.2 percent in 1976—an increase of 5.9 percent.

TABLE 1
EDUCATIONAL ATTAINMENT OF PERSONS 18 YEARS OLD AND OVER FOR THE
UNITED STATES AND REGIONS, 1970 AND 1976
(Numbers in Thousands)

Region	Total, 18 Years and Over	Years of School Completed						Median School Years Completed	Percent High School Grad.				
		Elementary School		High School		College			18 to 24 Years Old		25 Years Old and Over		
		0 to 4 Years	5 to 8 Years	1 to 3 Years	4 Years	1 to 3 Years	4 Years or More		Male	Female	Male	Female	
1970													
United States	133,384	6,385	26,196	26,272	44,189	17,184	13,157	12.2	70.9	73.8	51.9	52.8	
Northeast	32,980	1,354	6,551	6,448	11,337	3,805	3,484	12.2	72.8	76.8	52.6	53.2	
North Central	36,683	1,114	7,522	6,972	13,228	4,557	3,291	12.2	73.6	76.7	52.5	54.8	
South	40,878	3,110	8,985	8,781	11,559	4,761	3,682	11.9	64.7	67.2	44.9	45.3	
West	22,842	807	3,138	4,071	8,065	4,061	2,701	12.4	71.8	73.2	61.9	62.6	
1976													
United States	146,349	4,928	20,621	23,337	52,696	24,382	20,385	12.5	78.2	79.7	64.1	63.5	
Northeast	34,465	888	4,863	5,652	12,634	5,254	5,174	12.5	81.4	81.3	64.3	63.4	
North Central	39,067	713	5,593	6,064	15,577	6,208	4,911	12.5	80.7	82.2	64.7	65.8	
South	46,780	2,623	7,686	8,142	15,286	7,048	5,996	12.3	72.2	75.2	58.3	56.9	
West	26,036	704	2,478	3,479	9,199	5,871	4,305	12.7	81.3	81.6	73.2	72.3	

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, No. 334 (Washington, D.C.: Government Printing Office, 1979).

TABLE 2

MEDIAN SCHOOL YEARS COMPLETED AND PERCENT HIGH SCHOOL GRADUATES
BY AGE AND SEX IN NEW MEXICO, OTHER MOUNTAIN STATES AND THE UNITED STATES,
1970 AND 1976

State/Region	Median Years Completed	1970 Percent High School Graduates				Median Years Completed	1976 Percent High School Graduates				Percent Change 1970 to 1976	
		18-24 Years Old		25+ Years Old			18-24 Years Old		25+ Years Old			
		Male	Female	Male	Female		Male	Female	Male	Female		
		Male	Female	Male	Female		Male	Female	Male	Female		
New Mexico	12.2	70.7	68.6	55.6	58.9	12.5	75.2	75.0	63.8	63.0	8.2	4.1
Arizona	12.3	73.1	71.4	57.8	58.4	12.6	79.0	80.0	72.0	69.7	14.2	11.3
Colorado	12.5	77.1	78.9	62.9	64.8	12.8	82.2	83.8	77.0	76.5	14.1	11.7
Idaho	12.3	74.2	73.4	57.4	61.5	12.6	82.1	80.6	68.6	69.2	11.2	7.7
Montana	12.3	76.1	76.3	55.6	62.7	12.6	83.1	84.5	67.5	71.8	11.9	9.1
Nevada	12.4	76.3	73.9	64.5	65.9	12.6	80.9	82.4	75.6	73.0	11.1	7.1
Utah	12.5	78.2	80.8	67.2	67.3	12.8	85.4	85.6	79.8	77.7	12.6	10.4
Wyoming	12.4	76.2	74.0	59.9	65.7	12.6	85.1	84.6	71.5	73.7	11.6	8.0
Mountain States	12.4	75.3	75.3	60.3	62.2	12.7	81.2	81.9	72.9	72.1	12.6	9.9
United States	12.2	70.9	73.8	51.9	52.8	12.5	78.2	79.7	64.1	63.5	12.2	10.7

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, No. 334 (Washington, D.C.: Government Printing Office, 1979).

The 18 to 24 year old females graduating from high school increased 6.6 percent—from 75.3 percent in 1970 to 81.9 percent in 1976. Although the United States showed the same overall increase in the years of schooling completed by those 18 years of age and over from 1970 to 1976, the Mountain States showed a higher number of school years completed, 12.7, than the United States' 12.5. The percentage of male and female high school graduates 18 to 24 years old and 25 years old and over for the United States fell below that of the Mountain States, although the discrepancy was largest for those 25 years old and over.

Table 2 shows that the percentage of high school graduates—both male and female—in the age categories of 18 to 24 years of age and 25 years of age and over was highest for the Mountain State of Utah in 1976. In Utah 85.4 percent of the males 18 to 24 years of age and 85.6 of the females graduated from high school. For those 25 years of age and over, 79.8 percent of males and 77.7 percent of females received high school diplomas. The median years of schooling completed in Utah was 12.8 years. In contrast, New Mexico was the Mountain State that ranked lowest in the percentage of its population with a high school diploma of those between 18 and 24 years of age in 1976, 75.2 of the males and 75.0 of the females graduated from high school. The percent-

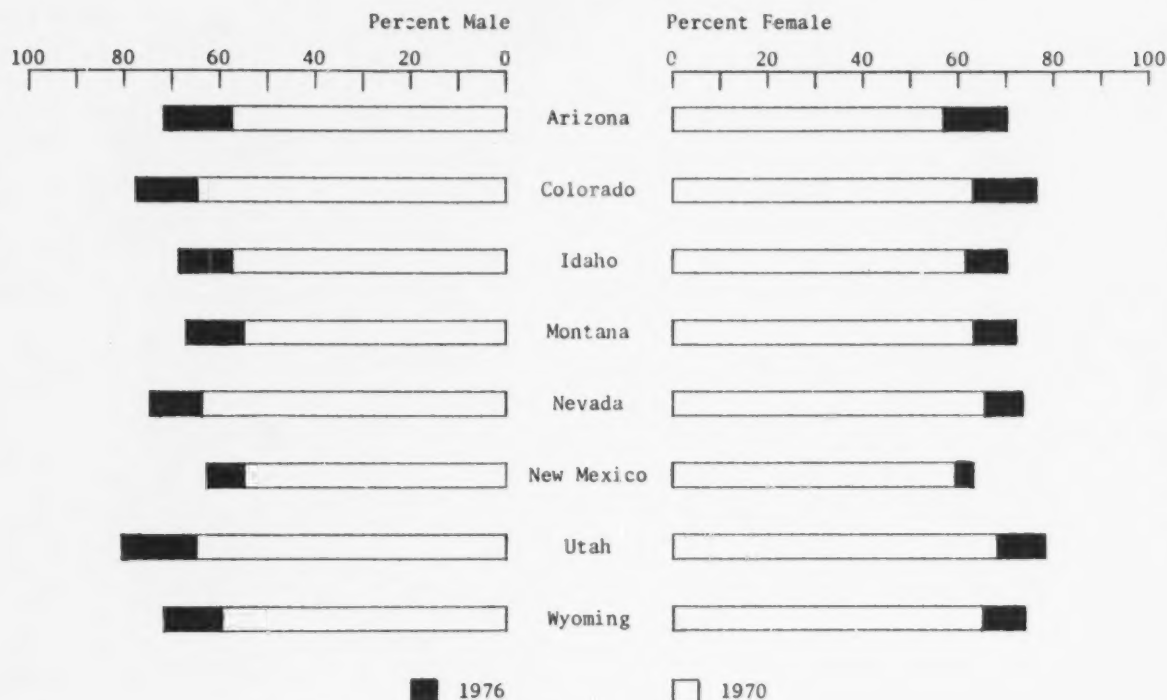
age of male and female high school graduates aged 25 years and over was 63.8 and 63.0, respectively. The median years of schooling completed in New Mexico was 12.5.

Table 2 also shows that Arizona and Colorado had the highest percentage increase between 1970 and 1976 of male and female high school graduates 25 years old and over. Arizona had increases of 14.2 percent for males and 11.3 percent for females, while Colorado had increases of 14.1 percent and 11.7 percent for males and females, respectively. The lowest increases between 1970 and 1976 were found in New Mexico with 8.2 percent for males and 4.1 percent for females 25 years of age and over. New Mexico fell well below the percentage increases for the Mountain States of 12.6 for males and 9.9 for females, and below the percentage increases for the United States of 12.2 for males and 11.3 for females.

Figure 1 graphically illustrates the percentage of high school graduates in New Mexico and the other Mountain States by age and sex group from 1970 to 1976. Generally, the figure shows a trend of increased levels of educational attainment in all Mountain States.

Table 3 shows the percentage increases in the number of college graduates in New Mexico and each of the other Mountain States from 1970 to 1976. The table illustrates that the increase in college graduates in New Mexico and the other

FIGURE 1

HIGH SCHOOL GRADUATES 25 YEARS OLD AND OVER
IN THE MOUNTAIN STATES, 1970 AND 1976

Source: Table 2.

TABLE 3

COLLEGE GRADUATES IN NEW MEXICO AND OTHER MOUNTAIN STATES
1970 AND 1976

State/Region	Total Population 18 Years Old and Over		Number of College Graduates		Percent of College Graduates		Percent Change 1970 to 1976
	1970	1976	1970	1976	1970	1976	
New Mexico	608,000	750,000	69,000	115,000	11.3	15.3	4.0
Arizona	1,124,000	1,528,000	127,000	240,000	11.3	15.7	4.4
Colorado	1,430,000	1,735,000	191,000	336,000	13.3	19.4	6.1
Idaho	448,000	547,000	40,000	74,000	9.0	13.5	4.5
Montana	441,000	506,000	44,000	72,000	10.0	14.2	4.2
Nevada	318,000	411,000	31,000	54,000	9.7	13.1	3.4
Utah	634,000	758,000	76,000	133,000	12.0	17.5	5.5
Wyoming	212,000	255,000	23,000	37,000	10.8	14.5	3.7
Mountain States	5,216,000	6,490,000	600,000	1,061,000	11.5	16.3	4.8

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, No. 334 (Washington, D.C.: Government Printing Office, 1979).

Mountain States was about 4.6 percent between the years of 1970 and 1976. In New Mexico, the percentage of college graduates increased from 11.3 in 1970 to 15.3 in 1976—an increase of 4.0 percent. The State of Colorado experienced the largest increase—6.1 percent followed by Utah with an increase of 5.5 percent. Nevada had the lowest increase between 1970 and 1976—3.4 percent. The percentage increase in the number of college graduates for the Mountain States was slightly higher than that for the United States.

SUMMARY

An analysis of the results of the 1976 Survey of Income and Education shows continued percentage increases in the educational attainment levels of the American population during the early part of the 1970s. During the six years from 1970 to 1976, the proportion of the United States' population 18 years of age and over with at least a high school education rose from 56 percent to 67 percent. At the national level, the number of adults who were college graduates rose 4 percent between 1970 and 1976; this trend was also found in most states.

The level of educational attainment was highest in the major geographical region of the West and lowest in the South. However, the percentage increase since 1970 was greater in the South than in any other region and smallest in the West.

In the Mountain States, the percentage of

males 25 years old and over completing high school increased 12.6 between 1970 and 1976, and 9.9 percent for females. The increase for males 18 to 24 years old completing high school was 5.9 percent, and 6.6 percent for females. The percentage of male and female high school graduates 18 to 24 years old and 25 years old and over for the United States fell below that of the Mountain States.

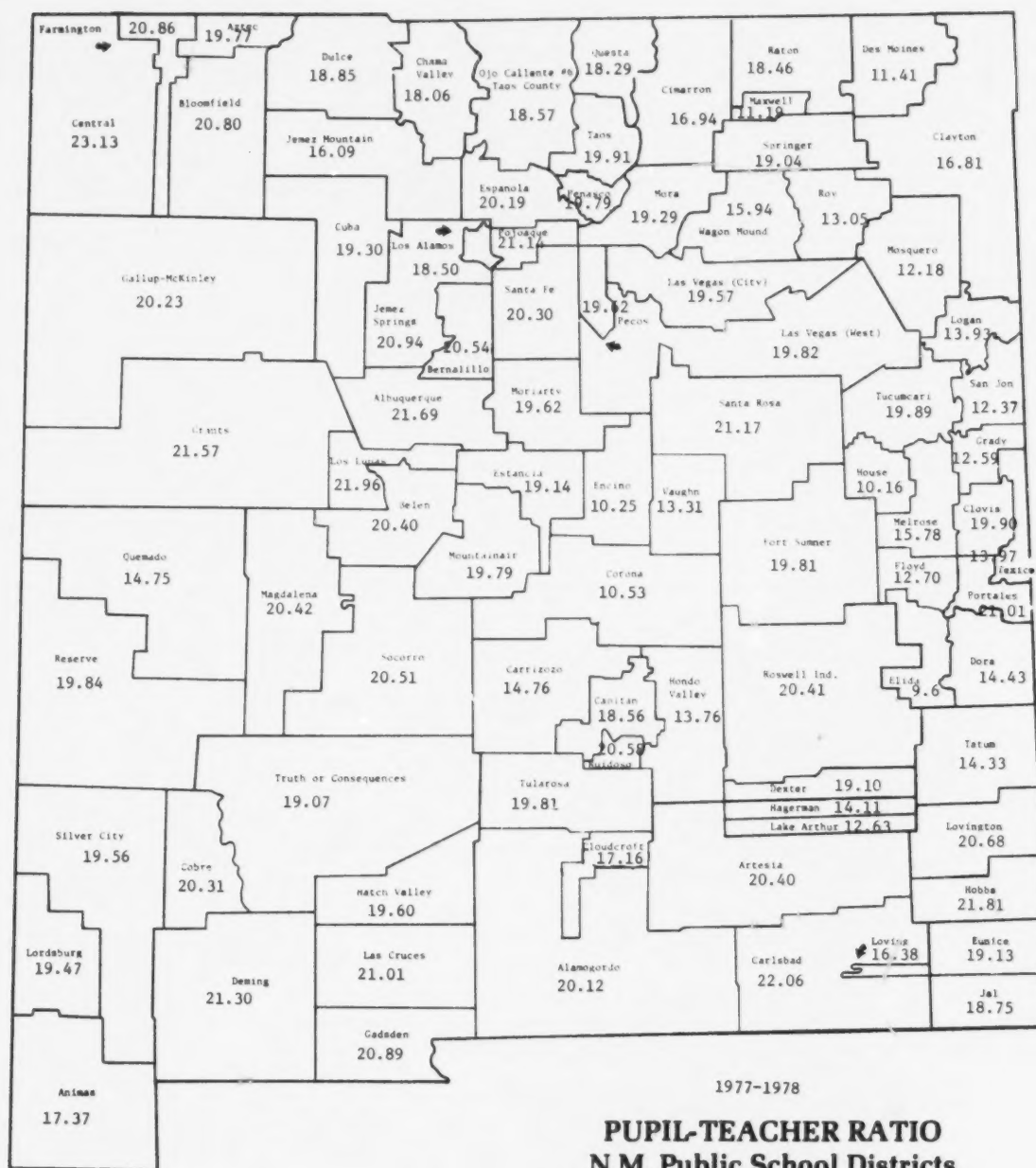
The highest percentage of high school graduates for both males and females in 1976 was found in the State of Utah. The median years of schooling completed in Utah was 12.8 years. New Mexico ranked lowest in the percentage of its population with a high school education; the median years of schooling completed were 12.5.

The highest percentage increases of high school graduates between 1970 and 1976 for both male and female high school graduates 25 years old and over were in Arizona and Colorado; the lowest percentage increase was found in New Mexico. New Mexico fell well below the percentage increase for the Mountain States and that for the United States.

The percentage increase in the number of college graduates in New Mexico and the other Mountain States was about 4.6 percent between 1970 and 1976. This increase was slightly higher than that for the United States. The largest percentage increases were experienced by Colorado and Utah, while the lowest percentage increase was in Nevada.

... and other related data ...

BBER STAFF



Source: New Mexico Department of Educational Finance and Cultural Affairs, Statistics, Public School Finance, 1978.

Table 1 compares levels of educational attainment for the population 18 years old and over in New Mexico and the United States. The median number of school years completed in New Mexico and the U.S. was the same in 1970 and 1976; both medians increased from 12.2 years in 1970 to 12.5 years in 1976. However, New Mexico showed a greater percentage of people at the low and high ends of the spectrum than the U.S. as a whole. In 1970, 7.6 percent of adult New Mexicans had completed four years of high school or less, compared to 4.8 percent for the U.S. At the same time, 14.5 percent of New Mexicans completed one to three years of college and 11.3 percent had four years or more, while the comparable figures for the U.S. were 12.9 percent and 9.9 percent, respectively. This distribution may partially be attributed to conditions on some Indian reservations and the poorer sections of the northern part of New Mexico at the low end, and the presence of research and development of mineral resources at the high end. The percentage of persons who completed at least some college increased for both New Mexico and the United States, with New Mexico continuing to lead the U.S. at 32.4 percent compared to 30.6 percent in 1976.

Table 1
SCHOOL YEARS COMPLETED BY PERSONS 18 YEARS OLD AND OVER, NEW MEXICO AND
UNITED STATES, 1970 AND 1976
(000's)

	1970		1976	
	United States	New Mexico	United States	New Mexico
Total, 18 years & over	133,384	608	146,349	750
Years of School Completed				
Elementary School:				
0-4 years	6,385	46	4,928	43
5-8 years	26,196	97	20,621	98
High School:				
1-3 years	26,272	112	23,337	116
4 years	44,189	197	52,696	250
College:				
1-3 years	17,184	88	24,382	128
4 years or more	13,157	69	20,385	115
Median School Years Completed	12.2	12.2	12.5	12.5

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, No. 334; 1979.

Table 2 depicts the level of educational attainment by specified poverty level of heads of families living in New Mexico who are 25 years old and over. The second column indicates that nearly three-fourths (73.7 percent) of all family heads with incomes below the poverty level did not complete high school. An inverse relationship between poverty status and educational attainment is evident; the percentage of families in poverty decreases as the level of education rises. The right hand side of the table reveals that 24.2 percent of those family heads completing less than 8 years of school have incomes amounting to less than 75 percent of the poverty level; only 5.0 percent of those completing high school and 2.4 percent of those with some college education fall into this same category. The table also shows that more than three-fourths (76.6 percent) of those family heads completing less than 8 years of school have incomes that amount to less than 200 percent of the poverty level while only 16.7 percent of those heads with a year of college or more fall into this low-income group.

Table 2
YEARS OF SCHOOL COMPLETED BY POVERTY STATUS--NEW MEXICO
1976
(000s)

Educational Attainment ¹	Total Number	Below Current Poverty Level		Below Specified Poverty Level							
		Number Total	Pov. Rate % Poor	Number				Percent			
				Below 75%	Below 125%	Below 150%	Below 200%	Below 75%	Below 125%	Below 150%	Below 200%
25 years and over	274	40	14.6	23	55	71	103	8.3	19.9	25.8	37.7
Elementary:											
Less than 8 years	43	17	40.0	10	22	26	33	24.2	50.1	59.8	76.6
8 years	21	5	22.1	2	7	8	11	10.3	32.3	38.0	53.1
High School:											
1 to 3 years	41	8	18.8	4	11	14	18	10.3	27.7	34.5	43.1
4 years	73	7	9.4	4	10	15	25	5.0	13.1	20.6	34.6
College:											
1 year or more	96	4	3.8	2	5	8	16	2.4	5.5	8.1	16.9
Percent not high school graduates	38.2	73.7	NA	73.9	72.7	67.6	59.8	NA	NA	NA	NA

NA Not applicable.

¹ Educational attainment of head of family. Husband in husband-wife families and head in other families.

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60, No. 113.

Table 3 represents a count of New Mexicans by education and income level. The inverse relationship between educational level and income evident in Table 2 also appears in these data. However, the contrast between incomes of males and females with comparable levels of education is noteworthy. For instance, the median income of a woman with four or more years of college is 56 percent less than that of her male counterpart. On the opposite end of the scale, the median income of a female with eight or less years of school is 59 percent less than that of a male with the same educational experience. The overall median income of males was approximately 2.5 times greater than that of females.

Table 3
EDUCATIONAL ATTAINMENT, BY SEX, BY INCOME¹--NEW MEXICO
1976
(000's)

	Total	\$1 to \$1,999 or Less	\$2,000 to \$3,999	\$4,000 to \$5,999	\$6,000 to \$7,999	\$8,000 to \$9,999	\$10,000 to \$11,999	\$12,000 to \$14,999	\$15,000 to \$19,999	\$20,000 to \$24,999	\$25,000 and over	Median Income
Male: 25 years and over	282	17	27	33	33	32	28	37	35	19	21	\$9,876
Elementary: Total	63	9	14	14	8	6	4	4	2	1	1	5,065
8 years	21	2	2	5	3	2	1	3	2	0	1	6,654
High School: Total	114	6	8	11	17	15	14	18	14	5	4	9,804
4 years	74	3	5	6	12	9	9	13	10	4	3	10,269
College: Total	106	2	5	8	8	11	11	15	18	13	15	13,741
4 years or more	64	1	3	3	5	5	6	7	11	10	12	15,908
Female: 25 years and over	219	67	46	33	25	21	14	8	3	1	1	\$3,822
Elementary: Total	47	23	16	6	1	1	0	0	0	0	0	2,058
8 years	16	7	4	3	1	0	0	0	0	0	0	2,312
High School: Total	104	30	22	18	13	12	6	1	1	0	0	4,010
4 years	76	19	15	13	10	11	6	1	0	0	0	4,744
College: Total	68	14	8	9	11	8	7	6	2	1	1	6,395
4 years or more	33	6	4	4	5	4	4	4	1	1	1	6,994

¹ 1975 income.

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60, No. 113.

Table 4 shows that New Mexico has had the highest illiteracy rate among the Mountain States in every Census year since 1900. The rate was more than three times the national average in 1900 and was still nearly twice the national norm in 1970. Arizona's record is only very slightly better than that of New Mexico. From 1900 to 1970, Nevada has shown the greatest reduction of the illiteracy rate—96.4 percent. Arizona and New Mexico were close behind, declining 94.0 and 93.8 percent, respectively. On the whole, however, a majority of the Mountain States have generally had lower rates of illiteracy than the national average since the turn of the century.

Table 4
PERCENTAGE OF POPULATION ILLITERATE, U.S. AND MOUNTAIN STATES
1900-1970¹

	1900	1910	1920	1930	1950	1960	1970
United States	11.3	8.3	6.5	4.8	3.3	2.4	1.2
Mountain States:							
Montana	6.6	5.1	2.5	1.9	1.8	1.0	0.6
Idaho	5.1	2.5	1.7	1.2	1.3	0.8	0.6
Wyoming	4.4	3.6	2.3	1.8	1.7	0.9	0.6
Colorado	4.5	4.1	3.6	3.1	2.0	1.3	0.7
New Mexico	35.7	21.7	17.4	14.9	6.6	4.0	2.2
Arizona	30.0	21.6	15.9	11.0	6.2	3.8	1.8
Utah	3.6	2.8	2.2	1.4	1.4	0.9	0.6
Nevada	13.8	6.9	6.4	4.8	2.2	1.1	0.5

¹ 1940 not available.

Source: U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1978.

Table 5 indicates that enrollment in New Mexico's public schools reached a peak in the 1971-1972 school year when 279,265 students attended classes. Since then, enrollment has been declining because of the declining birth rate following the post-World War II baby boom. By the 1977-1978 school year, enrollment had declined to 272,373, or 2.5 percent below the 1971-1972 peak. The substantial levels of in-migration experienced in New Mexico slowed the enrollment declines through the 1975-1976 school year.

Table 5
PUBLIC SCHOOL ENROLLMENT,
NEW MEXICO
1968-1978¹

School Year	Enrollment ²
1968-1969	271,289
1969-1970	274,832
1970-1971	278,695
1971-1972	279,265
1972-1973	278,529
1973-1974	276,451
1974-1975	275,513
1975-1976	274,335
1976-1977	274,871
1977-1978	272,372

¹ Includes ECE (Early Childhood Education).

² Forty-day average daily membership.

Source: New Mexico Department of Educational Finance and Cultural Affairs, Statistics, Public School Finance, 1978.

Table 6
HOLDING POWER OF PUBLIC HIGH SCHOOLS--NEW MEXICO
1963-64 to 1977-78

Year of Graduation	Prior 9th Grade Enrollment	Number of High School Graduates 4 Years Later	Graduates as Percent of 9th Grade Enrollment	Attrition Rate
1977-78	25,052	18,444	73.6	26.4
1976-77	24,638	17,988	73.0	27.0
1975-76	23,705	17,843	75.3	24.7
1974-75	23,782	18,438	77.5	22.5
1973-74	23,047	17,364	75.3	24.7
1972-73	22,676	17,248	76.1	23.9
1971-72	22,368	16,819	75.2	24.8
1970-71	21,782	16,261	74.7	25.3
1969-70	21,179	15,858	74.9	25.1
1968-69	20,513	15,438	75.3	24.7
1967-68	19,612	14,585	74.4	25.6
1966-67	19,469	14,250	73.2	26.8
1965-66	19,564	13,920	71.2	28.8
1964-65	19,099	13,453	70.4	29.6
1963-64	16,070	10,665	66.4	33.6

Note: Public schools only included in the above figures.

Source: New Mexico Department of Education, Annual Statistical Report, 1977-78.

Table 6 shows that approximately three-fourths of New Mexico students who enter the 9th grade go on to complete four years of high school in the state. Although the attrition rate was slightly higher during the mid-1960s, the rate has not varied significantly from 25 percent since then. Using data presented in Tables 6 and 7, it is apparent that about 15 percent of the students leave the public school system between 9th and 11th grade, while the remaining 10 percent leave the system in the 12th and final year. More than 18,000 students a year currently graduate from high school; slightly less than half of those graduates anticipate attending college.

Table 7

NEW MEXICO PUBLIC HIGH SCHOOL GRADUATES AS PERCENT OF 12th GRADE ENROLLMENT
AND NUMBER AND PERCENT PLANNING TO ENTER COLLEGE, 1960-61 TO 1977-78

<u>School Year</u>	<u>12th Grade Enrollment</u>	<u>Number of Graduates</u>	<u>% Graduates of 12th Grade Enrollment</u>	<u>% Graduates Planning College</u>
1977-78	20,488	18,600	90.8	45.7
1976-77	19,726	18,138	91.9	46.0
1975-76	19,213	18,049	93.9	45.6
1974-75	18,884	18,541	98.2	49.5
1973-74	18,958	17,537	92.5	43.5
1972-73	18,972	17,353	91.5	43.3
1971-72	18,801	16,929	90.0	46.6
1970-71	18,291	16,428	89.8	49.8
1969-70	17,665	16,064	90.9	51.5
1968-69	17,025	15,644	91.9	54.1
1967-68	16,375	14,803	90.4	50.2
1966-67	16,238	14,481	89.2	50.7
1965-66	15,989	14,146	88.5	49.9
1964-65	15,604	13,671	87.6	48.8
1963-64	12,231	10,874	88.9	40.5
1962-63	10,396	9,036	86.9	50.2
1961-62	10,198	8,971	87.9	50.5
1960-61	10,009	8,776	87.7	46.8

Note: Special State-Supported School figures are included in this chart.

Figures used reflect the 20-day ADM. Public school ADM furnished courtesy of the Division of Public School Finance.

Source: New Mexico Department of Education, Annual Statistical Report, 1977-78.

Main campus enrollment in New Mexico's six four-year institutions of higher learning has gradually increased since 1970. Enrollment declined slightly between the 1972-1973 and the 1977-1978 school years, but these drops did not offset the general increasing trend. During the eight-year period represented in Table 8, enrollment has increased from 34,345 to 41,360—a 20.4 percent increase. In New Mexico approximately 10,500 freshmen, 6,000 seniors, and 6,500 graduate students are currently enrolled in classes.

Table 8
MAIN CAMPUS ENROLLMENT¹ IN SIX FOUR-YEAR INSTITUTIONS²

	<u>Total</u>	<u>Freshmen</u>	<u>Sophomores</u>	<u>Juniors</u>	<u>Seniors</u>	<u>Graduate</u>	<u>Irreg. Class</u>
Fall Term Head Count							
1970	34,345	7,942	6,738	4,528	3,607	5,325	2,529
1971	36,925	10,613	7,951	5,781	4,897	5,455	2,328
1972	36,997	9,636	8,279	5,759	5,184	5,689	2,450
1973	36,705	9,318	8,136	5,454	5,677	5,630	2,490
1974	37,647	10,042	7,787	5,700	5,344	5,815	2,959
1975	40,280	10,598	7,811	5,674	5,739	6,254	4,204
1976	41,261	10,753	8,629	5,326	5,700	6,498	4,355
1977	41,527	10,644	8,359	5,488	5,926	6,547	4,563
1978	41,362	10,452	8,365	5,499	5,998	6,466	4,582

1 Law School enrollment is counted as graduate enrollment. Medical School enrollment is not included.

2 New Mexico State University, New Mexico Highlands University, Western New Mexico University, Eastern New Mexico University, New Mexico Institute of Mining and Technology, University of New Mexico.

3 Distribution between upper and lower division estimated for the Eastern New Mexico University.

Source: State of New Mexico, Board of Educational Finance, *Enrollment Histories--Six Four-Year Institutions*.

Table 9 indicates the continuing disparity between teachers' salaries in New Mexico and those in the United States. During the ten-year period portrayed in the table, this difference was smallest in 1968-1969 when New Mexico teachers received salaries averaging 6.3 percent less than the U.S. as a whole. The disparity grew through the early 1970s because New Mexico educators received smaller yearly salary increases than their national counterparts until the gap peaked in 1973-1974 at a 15.7 percent differential. With the exception of school year 1972-1973, the annual percentage increase in salaries for New Mexico teachers lagged behind that for teachers in the United States as a whole until 1974-1975. However, since 1974-1975 New Mexico teachers have received larger percentage increases which have reduced the salary difference to 9.9 percent.

Table 9
AVERAGE TEACHER SALARY--NEW MEXICO AND U.S.
1968-1978
(\$000's)

	School Year									
	1968- 1969	1969- 1970	1970- 1971	1971- 1972	1972- 1973	1973- 1974	1974- 1975	1975- 1976	1976- 1977	1977- 1978
New Mexico										
Percent Increase	\$ 7.4	\$ 7.8	\$ 8.2	\$ 8.3	\$ 8.7	\$ 9.1	\$10.0	\$11.0	\$11.9	\$12.8
United States	NA	5.4	5.1	1.2	4.8	4.6	9.9	10.0	8.2	7.6
Percent Increase	\$ 7.9	\$ 8.6	\$ 9.3	\$ 9.7	\$10.1	\$10.8	\$11.7	\$12.6	\$13.3	\$14.2
	NA	8.9	8.1	4.3	4.1	6.9	8.3	7.7	5.6	6.8

NA Not applicable.

Source: New Mexico Department of Educational Finance and Cultural Affairs, Statistics, Public School Finance, 1978 and National Education Association, Research Division, Estimates of School Statistics, 1977-78.

Net expenditures per pupil in New Mexico have risen from \$509 in 1968-1969 to \$1,224 in 1977-1978, a 140 percent increase during the ten-year period. During that same period, however, inflation accounted for an 88 percent rise in the general price level. The largest single-year increase in per-pupil expenditures occurred during the 1975-1976 school year—15.7 percent.

Table 10
NET EXPENDITURES PER PUPIL
IN NEW MEXICO--
OPERATIONAL FUND
1968-1978

Fiscal Year	Cost Per Pupil	Dollar Increase	Percent Increase
1968-69	\$ 509	\$	
1969-70	554	45	8.8
1970-71	591	37	6.7
1971-72	637	46	7.8
1972-73	697	60	9.4
1973-74	758	61	8.8
1974-75	862	104	13.7
1975-76	997	135	15.7
1976-77	1,120	123	12.3
1977-78	1,224	104	9.3

Source: New Mexico Department of Educational Finance and Cultural Affairs, Statistics, Public School Finance, 1978.

Current Economic Developments in New Mexico

MONTHLY SUMMARY

ILENE KELFER

U.S. economic activity in the third quarter showed a temporary rebound from its second quarter decline. During the third quarter, real GNP rose 2.4 percent and retail sales increased 2.1 percent. The unemployment rate remained at 5.8 percent and inventories rose 1.5 percent. (September's inventories registered an increase of only 0.8 percent.) Inflation, however, continued to plague the national economy. During each month of the third quarter consumer prices rose at least 1 percent, causing a steady reduction of the growth of real personal income. The temporary upswing reported in the national economy is also reflected in the state's economic activity for August, 1979.

Seasonally adjusted (SA) total employment in New Mexico increased 3.1 percent from August, 1978. Nonagricultural employment rose 4.0 percent (SA) during the same period. Although the 5.6 percent (SA) unemployment rate for August exceeded September's figure, it was down 0.1 percent from the previous August. There were 30,500 (SA) persons unemployed in the state in August—a 1.9 percent increase from the same month last year. (The apparent discrepancy between the unemployment rate and the number unemployed is attributable to the continuing growth of the civilian labor force.) Employment in the Trade sector continued modest expansion: retail trade employment reached 88,200 in August—a 5.8 percent increase from last year, while the number of jobs in wholesale trade grew 7.4 percent during the same period. The Manufacturing sector did not fare quite as well: the number of jobs rose by 4.8 percent from August, 1978 to August, 1979. The small increase (1.2 percent) in Manufacturing employment from

July, 1979 to August, 1979 is partly attributable to the start of the chili processing season. The average weekly hours worked in Manufacturing rose to 39.5 (SA) after declining 1.3 percent from June to July.

Because of rising gasoline prices and declining real income nationally, growth of employment in the Tourism sector from August, 1978 to August, 1979 was weak. During this period the number of jobs in the Services sector and in the Lodging subsector grew 2.2 percent (SA) and declined 2.9 percent (SA), respectively. Visits to national parks were down in June and July compared to the same months of the previous year, while August, 1979 visits were up 19.9 percent (SA) from August, 1978 levels. A 54.8 percent (SA) increase was recorded from July, 1979 to August, 1979. This contrasts with the 11.4 percent (SA) decline in visits to national parks during the same period last year.

Federal, state and local government employment declined in August compared to the previous month; but the August 1978 to August 1979 comparison shows federal and state government employment up (9.6 and 1.0 percent, respectively), and local government employment down (-2.5 percent). It is difficult to draw any firm conclusions from these observations because government employment in August tends to reflect the end of the summer semester of state universities, termination of federal summer job programs and the beginning of the public school year rather than the condition of the state's economy.

The Construction sector continued to show signs of contraction because of rising interest

rates and declining consumer confidence. Rising for the third time this year, interest rates for FHA and VA home mortgage loans were recently increased from 10.5 percent to 11.5 percent. Because the cost of conventional loans is even higher, funds for conventional loans are becoming more scarce. Reflecting this condition of tighter money and escalating home prices, the value of residential building permits fell 13.6 percent (SA) to \$26.2 million in August compared to the same month last year. During this same period, residential construction contracts declined 18.8 percent (SA), while non-building contracts dropped 34.1 percent. Only nonresidential construction contracts showed growth in August, expanding 16.0 percent. Construction employment in August was up 1.3 percent compared to the previous month; increases in employment from July to August are expected seasonal occurrences. Construction employment from August, 1978 to August, 1979 increased 1.8 percent. In contrast, the number of construction jobs rose more than 16 percent during this same period in the two previous years.

Meanwhile, the state's financial activity remained generally strong. Although new bank loans declined 13.7 percent (SA) from July to

August, they grew 3.3 percent (SA) from last year's level. New savings and loan deposits increased 59.8 percent from August, 1978 to August, 1979. Bank demand deposits remained stable in August after declining 6.0 percent in July; time deposits were up 12.1 percent compared to a year ago.

In summary, most of the economic sectors in the state's economy showed modest expansion in August. However, inflation and reduced real income continued to affect growth in New Mexico—particularly in the Trade, Services and Manufacturing sectors. The Federal Reserve Board's anti-inflationary policy of October 6 raised the discount rate from 11 to 12 percent. The increased prime lending rate—now between 15 and 15.25 percent—has, in turn, increased the cost of borrowing for both consumers and businesses. The effects of this policy will clearly cause the state's Construction sector to experience additional decline in growth. New Mexico has already demonstrated declining growth during 1979. If greater weakness occurs in the Construction sector, the other sectors of the state's economy can expect a more severe contraction in the near future.

ECONOMIC INDICATORS

	Quarterly Averages			
	1978		1979	
	Third Quarter	Fourth Quarter	First Quarter	Second Quarter
1. GENERAL				
Civilian Labor Force ¹ (000)	536.6	534.8	525.0	544.1
Seasonally Adjusted*	527.7	534.0	538.9	540.4
Total Employment ¹ (000)	507.0	506.0	493.5	514.4
Seasonally Adjusted*	497.6	504.5	508.9	510.5
Unemployment ¹ (000)	29.5	28.8	31.6	29.7
Seasonally Adjusted*	30.2	29.6	30.0	29.9
Unemployment Rate (%)	5.5	5.4	6.0	5.5
Seasonally Adjusted*	5.7	5.5	5.6	5.5
Weekly New Unemployment Insurance Claims	1,144.0	1,302.7	1,436.0	1,171.7
Seasonally Adjusted*	1,268.7	1,259.3	1,236.4	1,294.1
Nonagricultural Wage/Salary Employment ² (000)	452.9	455.4	449.9	465.8
Seasonally Adjusted*	448.3	454.5	458.4	463.0
New Business Incorporations	254.3	201.7	237.7	na
Business Failure Liabilities (\$000)	0.0	0.0	58.0	na
2. AGRICULTURAL RECEIPTS				
From Livestock and Products (\$ mil.)	na	na	na	na
Seasonally Adjusted*	na	na	na	na
From Crops (\$ mil.)	na	na	na	na
Seasonally Adjusted*	na	na	na	na
3. MINING PRODUCTION				
Petroleum (000 bbls.)	6,903.0	6,827.3	6,454.2	6,578.6
Natural Gas (bil. cu. ft.)	94.0	97.9	95.7	95.4
Seasonally Adjusted*	96.7	96.1	93.7	96.8
Copper Ore (000 tons)	10.6	11.9	13.8	16.6
Coal Production (000 short tons)	1,084.0	1,053.0	1,033.3	978.3
4. CONSTRUCTION				
Residential Building Permits (\$ mil.)	28.9	20.7	24.8	30.1
Seasonally Adjusted*	28.8	24.3	24.1	26.5
Residential Construction Contracts (\$ mil.)	42.7	33.9	40.2	48.8
Seasonally Adjusted*	43.1	40.7	38.1	43.0
Nonresidential Construction Contracts (\$ mil.)	17.4	24.7	16.1	26.0
Nonbuilding Construction Contracts (\$ mil.)	24.6	17.1	18.2	15.3
5. MANUFACTURING				
Employment ² (000)	33.7	34.1	34.1	35.1
Seasonally Adjusted*	33.3	33.6	34.8	35.2
Average Weekly Hours	38.5	38.9	39.6	39.5
Seasonally Adjusted*	38.6	38.4	39.9	39.7

ECONOMIC INDICATORS (continued)

June	1979		Percentage Change				Percentage Change		
	July	August	III 1977- III 1978	IV 1977- IV 1978	I 1978- I 1979	II 1978- II 1979	June 78- June 79	July 78- July 79	Aug. 78- Aug. 79
556.4	555.7	551.9	3.4	3.5	4.3	3.6	3.6	3.4	3.0
541.5	543.5	542.3	3.3	3.5	4.4	3.6	3.6	3.4	3.0
522.1	525.1	522.1	5.3	4.9	4.7	3.8	3.6	3.6	3.1
510.4	513.8	511.9	5.4	4.9	4.7	3.8	3.6	3.6	3.1
34.3	30.6	29.8	- 21.9	- 15.5	- 1.0	- 0.2	3.0	0.7	2.1
31.1	29.7	30.5	- 21.9	- 15.6	- 1.0	- 0.3	3.2	0.8	1.9
6.2	5.5	5.4	- 24.3	- 18.2	- 4.7	- 2.8	0.0	- 3.5	0.0
5.8	5.5	5.6	- 24.5	- 18.4	- 5.1	- 3.6	- 0.3	- 2.5	- 1.0
1,261.0	1,256.0	1,043.0	- 3.0	7.4	5.8	0.7	2.9	7.3	- 9.3
1,309.5	1,323.5	1,144.9	- 2.7	7.1	5.0	0.3	3.1	7.4	- 9.7
470.7	470.0	471.2	6.9	6.4	5.5	4.9	4.5	4.2	4.0
463.3	465.4	465.6	7.0	6.4	5.5	4.9	4.5	4.2	4.0
na	na	na	32.9	22.7	25.9	na	na	na	na
na	na	na	-100.0	-100.0	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
6,487.9	na	na	- 3.9	- 6.1	- 7.7	- 5.8	- 5.6	na	na
92.9	na	na	- 0.9	- 1.5	- 2.8	1.1	2.7	na	na
98.1	na	na	- 1.0	- 1.3	- 2.8	1.1	2.7	na	na
16.1	14.2	na	- 16.6	- 19.1	3.8	47.1	48.2	74.1	na
953.0	671.0	1,182.0	8.4	20.8	3.7	- 0.2	- 13.1	- 26.2	- 6.8
33.3	28.2	26.8	11.8	- 3.0	- 7.9	- 1.0	20.5	7.3	- 13.1
29.2	27.4	26.2	11.3	- 3.4	-10.3	- 0.5	21.0	7.3	- 13.6
46.3	46.3	40.1	- 10.4	- 16.1	7.2	9.7	- 24.7	2.6	- 19.1
41.5	40.9	40.0	- 11.7	- 14.8	7.2	9.0	- 24.5	2.1	- 18.8
18.6	49.2	19.1	- 12.0	2.0	- 1.9	84.6	- 10.2	102.7	16.0
31.3	20.9	26.3	- 8.6	- 8.4	1.5	- 58.4	- 41.8	- 13.5	- 34.1
35.3	34.9	35.3	3.5	2.5	4.9	6.6	6.0	4.8	4.8
35.1	34.8	34.7	3.6	2.5	4.9	6.5	6.0	4.9	4.8
39.5	39.0	39.2	- 1.3	- 3.3	- 0.7	0.6	1.0	1.6	2.1
39.7	39.2	39.5	- 1.3	- 3.3	- 0.8	0.6	1.1	1.7	2.1

ECONOMIC INDICATORS (continued)

	Quarterly Averages			
	1978		1979	
	Third Quarter	Fourth Quarter	First Quarter	Second Quarter
6. <u>TRANSPORT./COMMUNIC./UTIL.</u>				
Employment ² (000)	26.8	27.9	27.9	27.9
7. <u>TRADE</u>				
Wholesale Employment ² (000)	20.4	20.7	20.8	21.3
Retail Employment ² (000)	83.2	83.9	82.5	85.7
Seasonally Adjusted*	81.3	83.2	85.3	85.6
Average Weekly Hours	36.3	35.4	34.5	35.2
8. <u>FINANCE</u>				
Bank Debits (\$ mil.)	3,297.9	3,470.6	5,907.3	10,958.6
Seasonally Adjusted*	3,310.1	3,519.4	5,997.3	10,891.2
New Bank Loans (\$ mil.)	241.4	267.5	235.1	255.7
Seasonally Adjusted*	250.3	258.9	235.5	259.5
Bank Demand Deposits (\$ mil.)	1,047.6	1,060.0	962.5	1,045.3
Bank Time Deposits (\$ mil.)	1,633.6	1,679.4	1,712.5	1,779.1
Total Savings Deposits (Savings and Loan Assoc.) (\$ mil.)	1,653.0	1,712.4	1,779.1	1,814.3
New Savings and Loans Received (\$ mil.)	98.4	101.1	118.2	115.4
9. <u>SERVICES AND TOURISM</u>				
Service Employment ² (000)	91.0	88.3	84.3	89.6
Seasonally Adjusted*	87.9	90.0	86.8	88.5
Lodging Employment ² (000)	10.0	9.1	8.9	9.6
Seasonally Adjusted*	9.2	9.5	9.4	9.5
Visits to National Parks/Monuments (000)	269.8	79.0	95.3	201.4
Seasonally Adjusted*	158.8	145.0	179.3	165.4
10. <u>GOVERNMENT</u>				
Federal Employment ² (000)	35.5	35.1	35.9	37.1
State Employment ² (000)	31.3	33.7	33.7	33.4
City and County Employment ² (000)	48.1	49.8	50.8	51.3

* Seasonally adjusted figures are economic time series which have had seasonal variations removed with statistical processes. These purely seasonal variations include the effects of: the opening and closing of school, the annual pattern of seasons (especially applicable to agricultural data), holidays, and other annually recurring events which influence economic activity. By removing these seasonal variations from raw economic data, month-to-month analysis of trends and unusual fluctuations in economic activity is facilitated.

na Not available.

1 Number of persons by place of residence.

2 Number of jobs by place of work.

ECONOMIC INDICATORS (continued)

			Percentage Change				Percentage Change		
June	1979 July	August	III 1977- III 1978	IV 1977- IV 1978	I 1978- I 1979	II 1978- II 1979	June 78- June 79	July 78- July 79	Aug. 78- Aug. 79
27.6	27.4	27.7	9.5	10.2	8.7	6.6	5.8	4.2	4.5
21.6	21.7	21.9	6.4	6.7	8.2	7.0	6.9	6.4	7.4
87.0	87.0	88.2	4.9	5.8	6.6	5.4	5.2	5.3	5.8
85.4	85.3	86.0	5.0	5.8	6.5	5.4	5.2	5.3	5.9
35.8	35.8	36.1	0.5	- 1.1	- 2.9	- 1.3	- 0.8	- 2.4	- 1.6
11,571.1	10,095.0	9,163.0	19.1	27.9	86.0	272.7	270.4	205.6	165.0
11,506.1	9,461.1	8,628.7	21.0	27.6	86.7	273.5	285.1	195.3	162.4
257.5	281.6	267.4	9.3	10.4	- 0.1	1.3	- 8.9	21.1	3.2
269.5	293.1	253.0	11.5	10.8	0.0	1.3	- 7.0	16.6	3.3
1,086.4	1,021.0	1,041.0	12.7	10.6	0.1	3.7	4.8	- 1.6	0.0
1,782.7	1,817.0	1,827.9	12.2	10.8	10.8	12.4	12.1	11.7	12.1
1,830.6	1,829.3	1,848.2	18.1	18.0	17.0	14.7	13.6	12.0	12.2
107.3	173.9	146.4	28.6	44.1	24.1	26.1	6.1	58.8	59.8
92.7	93.8	93.6	8.9	8.0	2.2	2.5	2.2	2.1	2.1
88.6	88.9	89.5	9.0	8.0	2.2	2.4	2.2	2.1	2.2
9.9	9.9	9.8	1.7	5.5	4.4	3.7	1.0	- 1.0	- 3.0
9.3	9.0	8.9	1.8	5.5	4.3	3.7	1.0	- 1.0	- 2.9
245.5	273.5	356.5	- 2.1	- 20.4	- 7.6	3.4	- 9.5	- 28.3	21.4
134.4	118.4	183.3	- 2.4	- 23.0	-11.7	9.1	- 10.3	- 28.3	19.9
37.7	39.2	39.0	2.0	2.2	5.2	5.4	5.9	9.8	9.6
30.9	31.6	30.8	7.7	12.1	10.0	6.7	3.0	2.3	1.0
51.3	47.4	47.0	5.4	1.8	2.0	2.0	2.8	0.2	- 2.5

Sources: New Mexico Department of Human Services, Employment Services Division: Sections 1,5,6,7,9,10; Dun and Bradstreet, Inc.: Section 1; USDA Statistical Reporting Service: Section 2; Oil Conservation Commission: Section 3; New Mexico Bureau of Revenue: Section 3; Building Inspectors' reports, 18 cities: Section 4; F.W. Dodge Co. (a division of McGraw-Hill, Inc.): Section 4; Federal Power Commission: Section 6; Bank reports (36): Section 8; Federal Home Loan Bank of Little Rock: Section 8; United States Department of the Interior, National Park Service: Section 9.

VALUE OF BUILDING PERMITS--SELECTED CITIES

	Residential				Nonresidential			
	August 1978	August 1979	Cumulative Total Through August		August 1978	August 1979	Cumulative Total Through August	
			1978	1979			1978	1979
Alamogordo	\$ 558,000	\$ 445,929	\$ 4,487,542	\$ 5,007,405	\$ 28,700	\$ 241,500	\$ 1,103,975	\$ 833,315
Albuquerque	16,722,251	14,750,490	130,667,627	137,146,811	4,062,486	15,197,403	26,059,667	50,244,534
Artesia	92,000	444,000	1,262,706	1,859,000	0	4,300	51,450	992,865
Carlsbad	336,150	254,232	5,479,185	1,859,882	205,000	255,000	1,309,000	1,800,540
Clayton	28,728	77,466	356,341	302,586	0	2,000	9,600	117,000
Clovis	552,868	353,484	5,168,409	4,273,632	56,254	79,631	1,004,861	1,563,159
Deming	145,400	1,471,700	2,322,200	2,952,700	47,000	0	272,000	927,900
Farmington	3,252,268	1,081,933	12,437,773	7,960,079	331,216	188,322	7,274,496	4,104,629
Gallup	2,108,572	854,843	5,094,382	4,012,622	65,368	237,250	1,637,180	5,549,280
Grants	535,000	296,867	3,270,320	3,266,572	42,000	184,000	7,991,360	847,700
Hobbs	998,000	846,500	7,813,800	5,503,750	274,700	2,723,000	3,372,575	4,377,860
Las Cruces	1,191,986	1,387,967	14,874,520	15,460,527	106,700	1,118,497	8,460,219	2,971,547
Las Vegas	151,307	146,080	1,701,390	777,795	0	0	0	1,344,659
Lordsburg	0	0	4,450	55,500	0	0	284,200	73,500
Portales	72,000	193,148	1,062,390	1,192,648	0	10,000	476,500	470,300
Raton	0	10,800	1,484,878	401,865	0	21,000	950,070	381,000
Roswell	1,715,310	1,070,500	9,272,119	7,981,089	182,860	416,364	1,897,330	1,354,866
Santa Fe	2,312,119	na	21,767,961	na	1,027,000	na	5,312,254	na
Tucumcari	58,000	0	351,467	231,500	20,000	0	48,692	1,348,002
TOTAL	\$30,829,959	\$23,685,939	\$228,879,460	\$200,245,963	\$6,449,284	\$20,678,267	\$67,515,429	\$79,302,656

na Not available.

Source: Individual reports by city building inspectors.

ESTIMATED CIVILIAN LABOR FORCE AND EMPLOYMENT

	New Mexico			Albuquerque SMSA ¹		
	August 1978 ^r	July 1979 ^r	August 1979 ^p	August 1978 ^r	July 1979 ^r	August 1979 ^p
TOTAL CIVILIAN LABOR FORCE	535,700	555,700	551,900	197,500	204,000	202,600
Employment ²	506,500	525,100	522,100	186,500	192,900	191,800
Unemployment	29,200	30,600	29,800	11,000	11,100	10,800
Percentage of Labor Force	5.5	5.5	5.4	5.6	5.4	5.3
Nonagricultural Wage & Salary Employment	453,300	470,000	471,200	181,300	187,300	187,100
Mining	25,100	27,300	27,400	na	na	na
Contract Construction	37,900	38,100	38,600	16,300	16,100	16,300
Manufacturing	33,700	34,900	35,300	17,400	18,000	18,200
Durable Goods	19,500	20,700	20,800	11,900	12,500	12,600
Nondurable Goods	14,200	14,200	14,500	5,500	5,500	5,600
Transportation and Public Utilities	26,500	27,400	27,700	10,200	11,200	11,300
Trade	103,800	108,700	110,100	46,000	47,700	48,500
Wholesale	20,400	21,700	21,900	12,200	13,000	13,100
Retail	83,400	87,000	88,200	33,800	34,700	35,400
Finance, Insurance and Real Estate	20,300	21,600	21,700	10,200	11,100	11,100
Services and Miscellaneous	91,700	93,800	93,600	41,100	42,100	42,200
Government	114,300	118,200	116,800	40,100	41,100	39,500
Federal	35,600	39,200	39,000	12,200	13,000	12,800
State	30,500	31,600	30,800	9,800	9,800	8,800
Local	48,200	47,400	47,000	18,100	18,300	17,900

na Not available, less than 50 jobs.

p Preliminary.

r Revised.

¹ Albuquerque Standard Metropolitan Area includes Bernalillo and Sandoval Counties.² Includes labor disputes.

Source: New Mexico Employment Security Department.

ALBUQUERQUE¹ BANKING DATA (\$000s)

	August 1978	August 1979	% Change Aug. 1978- Aug. 1979
BANKS			
Bank Debits	\$2,433,165.5	\$7,991,431.2	228.4
New Loans and Discounts	129,518.9	148,497.0	14.7
Demand Deposits	559,610.9	542,340.0	- 3.1
Time Deposits	810,087.7	910,009.9	12.3
SAVINGS AND LOAN			
Savings Deposits	\$ 746,400.0	\$ 835,100.0 ^p	11.9
New Savings Received	53,900.0	79,400.0 ^p	47.3

p Preliminary.

¹ Bernalillo County for bank information, Albuquerque SMSA for savings and loan data.

Sources: Five reporting banks and
Federal Home Loan Bank of Little Rock.

CONSUMER PRICE INDEXES AND INDEXES OF SELECTED CATEGORIES U.S. City Average (1967=100)

	All Urban Consumers				Revised Series, Wage Earners and Clerical Workers			
	July 1979	Aug. 1979	Aug. 78- Aug. 79	July 79- Aug. 79	July 1979	Aug. 1979	Aug. 78- Aug. 79	July 79- Aug. 79
ALL ITEMS	218.9	221.1	11.8	1.0	219.4	221.5	12.0	1.0
Food	236.9	236.3	9.7	-0.3	237.1	236.5	9.8	-0.3
Housing	228.4	231.5	12.8	1.4	228.4	231.5	13.0	1.4
Apparel and Upkeep	164.3	166.3	4.2	1.2	164.5	166.2	4.1	1.0
Transportation	216.6	219.6	16.7	1.4	217.8	220.7	17.0	1.3
Medical Care	239.9	241.8	9.2	0.8	240.5	242.6	9.6	0.9
Entertainment	189.1	190.2	7.2	0.6	188.6	188.9	7.0	0.2
Other Goods and Services	195.2	197.0	7.1	0.9	195.1	197.2	7.0	1.1

Source: U.S. Department of Labor, News.

HOURS AND EARNINGS OF PRODUCTION CONSTRUCTION AND NONSUPERVISORY EMPLOYEES

New Mexico

	Average Weekly Hours			% Change Aug. 78- Aug. 79	Average Hourly Earnings			% Change Aug. 78- Aug. 79
	Aug. p 1979	July 1979	Aug. 1978		Aug. p 1979	July 1979	Aug. 1978	
Mining	44.7	44.1	42.4	5.4	\$8.40	8.37	7.46	12.6
Construction	35.8	36.2	37.2	-3.8	8.91	8.71	8.21	8.5
Manufacturing	39.2	39.0	38.4	2.1	5.50	5.49	4.80	14.6
Durable Goods	39.6	40.0	39.0	1.5	6.02	5.88	5.21	15.5
Nondurable Goods	38.5	37.3	37.5	2.7	4.63	4.80	4.15	11.6
Communication and Utilities	42.4	42.0	41.3	2.7	7.52	7.09	6.99	7.6
Trade ¹	36.1	35.8	36.7	-1.6	5.50	5.44	4.99	10.2
Banking	40.7	42.2	39.1	4.1	3.63	3.68	3.46	4.9

p Preliminary.

¹ Excludes eating and drinking places.

Source: New Mexico Employment Security Department.

ALBUQUERQUE FOOD PRICE INDEX: SEPTEMBER 1979

June 1974 = 100(all items)

	Sep. 79 Index	June 74 Sep. 79	% Change	
			Sep. 78 Sep. 79	Aug. 79 Sep. 79
ALL FOOD ITEMS	153.3	53.3	10.8	1.2
Cereals and Baked Products	145.0	45.0	16.3	6.8
Meat, Fish, Poultry	166.5	66.5	16.6	3.5
Fruits and Vegetables	148.9	48.9	6.5	-4.5
Dairy Products	135.7	35.7	5.0	-0.2
Other Food Items	153.9	53.9	6.9	0.9

Food Items	Quantity	September 1979		% Change		
		Price	Index	June 74 Sep. 79	Sep. 78 Sep. 79	Aug. 79 Sep. 79
Flour, all purpose	5 lb	\$1.12	97.6	- 2.4	10.5	10.4
Corn Flakes	12 oz	.62	159.5	59.5	1.4	- 0.3
Bread, white	1b	.54	153.9	53.9	28.9	8.9
Cookies, cream	16 oz	1.14	144.7	44.7	11.0	9.0
Hamburger	1b	1.63	188.3	88.3	29.3	5.9
Round steak, bone-in	1b	2.29	182.6	82.6	15.3	2.2
Sirloin steak, boneless	1b	2.96	171.0	71.0	31.2	16.1
Chuck roast, blade	1b	1.75	230.7	130.7	35.1	2.8
Beef liver	1b	1.30	139.6	39.6	44.7	- 0.5
Pork chops	1b	2.22	156.8	56.8	5.5	5.4
Bacon, sliced	1b	1.94	168.6	68.6	0.6	3.2
Pork roast, loin	1b	1.78	131.0	31.0	24.5	2.1
Frankfurters	1b	2.05	162.9	62.9	16.5	- 0.9
Fryers, whole	1b	.63	125.5	25.5	1.6	4.7
Tuna, light chunk	6 oz	.91	157.0	57.0	0.9	2.2
Bananas	1b	.35	172.7	72.7	33.6	9.7
Oranges	dozen	1.60	180.6	80.6	- 2.8	-10.0
Lettuce	1b	.56	129.4	29.4	39.2	-21.0
Potatoes, except baking	10 lb	1.18	61.6	- 38.4	-10.5	3.8
Tomatoes	1b	.51	97.4	- 2.6	- 0.2	-26.7
Carrots	1b	.49	211.6	111.6	43.7	6.5
Onions, yellow	1b	.19	134.9	34.9	- 0.6	6.5
Fruit cocktail	#303	.67	180.2	80.2	21.5	0.6
Tomatoes, canned	#303	.55	168.1	68.1	- 0.8	- 0.5
Peas, canned	#303	.46	152.7	52.7	5.5	1.3
Frozen orange juice	6 oz	.47	177.4	77.4	-10.0	- 4.4
Frozen broccoli spears	10 oz	.53	130.8	30.8	- 3.3	0.7
Milk	quart	.53	127.4	27.4	- 1.1	1.3
Evaporated milk	13 oz	.45	152.2	52.2	13.9	0.5
Ice cream	1/2 gal	1.53	131.3	31.3	- 0.5	- 4.7
Cheese, sliced	6 oz	.94	158.7	58.7	26.1	- 0.7
Eggs, AA large	dozen	.79	129.7	29.7	5.6	2.0
Margarine	1b	.74	122.3	22.3	2.4	1.8
Sugar	5 lb	1.31	90.8	- 9.2	1.1	0.6
Coffee	1b	3.21	248.4	148.4	- 1.7	- 0.3
Instant coffee	6 oz	3.35	211.8	111.8	1.3	- 0.2
Cola drink	10 oz ctn	1.23	156.4	56.4	8.3	- 0.3
Chicken noodle soup	10 oz	.29	129.9	29.9	6.6	0.4
Baby food, strained	4 oz	.25	184.3	84.3	-11.2	2.3
Frozen french fries	9 oz	.46	215.5	115.5	66.1	2.7

na Not available.

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Announcement

The Bureau of Business and Economic Research has historically served as the New Mexico "affiliate" to the U.S. Bureau of the Census. This role has included a variety of demographic functions involving 1) processing, analysis, and dissemination of information on New Mexico from the decennial Censuses; 2) review of interim year population estimates prepared by the Bureau of the Census; 3) assistance to New Mexico communities wishing to challenge those estimates; and 4) development of population projections for New Mexico and its subdivisions. The articles in this issue of *New Mexico Business* continue this role by reporting on the upcoming 1980 Census and various programs related to it.

However, due to financial constraints, the continuation of this role is very much in doubt. The program is currently under active review at the University and the outcome of that review will be reported in a subsequent issue of *NMB*.


Lee Brown
Director

The 1980 Census and New Mexico

BETSIE KASNER and LYNN WOMBOLD

[Betsie Kasner is Head of Information Services and Lynn Wombold, Demographer, at the Bureau of Business and Economic Research. The authors wish to thank Ted Martinez of the Bureau of the Census for his contribution to the Community Services Program description.]

OVERVIEW

The U.S. Bureau of the Census is in the final stage of preparation for the 1980 Census of Population and Housing. April 1, 1980 (Census Day) will culminate seven years of planning. The 1980 Census will attempt to count every man, woman, and child in the United States and will provide a wealth of information on the social, economic, and demographic characteristics of the population. These data will determine congressional apportionment and the distribution of billions of federal dollars.

This article summarizes the planning that has gone into the 1980 Census, explains the method for taking the Census, and outlines data to be released after questionnaires are processed and the responses tabulated. Reference is made to New Mexico where applicable. Some federal programs tied to decennial census data are described. The Census Bureau has worked throughout the 1970s with state and local agencies to define geographic boundaries of census administrative and analytic units. These activities fall under the heading of "geographic programs" and are described in detail. The revised Standard Metropolitan Statistical Area (SMSA) criteria are explained and implications of the change in definition discussed. A copy of the 1980 census questionnaire is included, with the major differences between questions asked in 1970 and those to be asked in 1980 illustrated. The supplementary questionnaire to be used on Indian reservations is noted. Finally, a schedule of tentative release dates for printed reports and computer tapes is provided.

INTRODUCTION

Planning for the 1980 Census began in mid-1973, even before all of the reports from the 1970 Census had been released. Numerous conferences

have been held throughout the country, to solicit suggestions for improving the 1980 Census from public and private agencies, individuals, and advisory committees. Mailing lists for 50 million households have been purchased from commercial mailing firms, and temporary workers are currently compiling mailing addresses in the field for another 30 million households. Printing plants in Arizona, California, and New Jersey are working around the clock to produce 86 million census questionnaires.

All households should receive the 1980 census questionnaire on March 28, 1980. Ninety percent of all households will be instructed to fill out and return the questionnaire by mail on April 1, Census Day. An enumerator will collect the questionnaires from the remaining 10 percent of the households located in more sparsely settled areas of the country. The forms will be reviewed and edited for completeness and consistency, be followed-up as necessary, and then be shipped to one of three processing centers. After responses have been transferred to computer tape and tabulated, information on the social and economic characteristics of the American people will be released. Among other things, the 1980 Census is expected to show that:

- There are more than 8 million single women who head households, an increase of 50 percent since 1970.
- Both the husband and wife work in one-half of the nation's husband-wife families.
- The traditional family household of a mother, father, and one or more children now accounts for less than one-third of all American households.
- The United States is experiencing one of the lowest population growth rates in its history.
- There has been a sizable population shift from

Northern and Eastern states to the Southern and Western states.

These and more detailed data will be used for legislative reapportionment and redistricting, planning by state and local governments, and marketing strategies by private firms together with many other, rapidly growing, uses of this information.

Congressional apportionment based on state population is required by the Constitution. At this time, the best estimate¹ is that New York, Ohio, Illinois, Pennsylvania, Michigan, and South Dakota will lose congressional seats. Florida, Texas, California, Arizona, Washington, Oregon, and Tennessee are expected to show gains.

Census data will also determine the distribution of \$50 billion worth of federal funds. There are currently more than 100 federal programs which allocate funds based on total population or selected population characteristics. For example, funding for the Cooperative Extension Service is based on a state's rural and farm population as determined by the Census. Federal monies spent on the Headstart program depend upon the number of children in families below the poverty level. Although the federal government funds low-cost, hot meal programs for the elderly, local officials must choose the sites from which to operate this service. By using census data on income and age distribution of the elderly, the best location in a community can be selected.

Of the federal programs which use population to determine fund allocation, the largest single program—general revenue sharing administered by the U.S. Department of Treasury—distributed \$6.2 billion to local governments in 1975. The U.S. Department of Health, Education, and Welfare allocates the most population-based grant money—\$15.6 billion.

PLANNING THE 1980 CENSUS Complete Count

Many of the pre-census programs and activities were designed to insure an accurate and complete count of the total population, but especially of minority groups. It has been estimated that about 5.1 million people (2.5 percent of the population) were not counted by the 1970 Census. Males had a higher rate of undercount than did females;

minorities were missed more frequently than were whites. (See Table 1.) The best estimate for the rate of underenumeration of the black population was 7.7 percent. Hispanic and Indian leaders believe that the undercount for their groups may have been even higher. Experimental estimates by the Census Bureau suggest that the undercount for the total population in New Mexico may have been as high as 9.2 percent, the highest for any state.² If all New Mexicans had been counted in 1970, the state might have received as much as 6 percent more federal funding from programs which use population as part of their allocation formulas.³

Although the Census Bureau admitted the problem of undercounting in the 1970 Census, it made no adjustment of state and local population counts for the purpose of revenue sharing. The Census Bureau took the position that such adjustments were inappropriate because there is currently no accurate and widely accepted method of adjusting population figures for undercount.⁴ It has not yet been decided whether or not the 1980 Census population counts will be adjusted. A two-day conference will be held during the spring of 1980 in Washington, D.C. to study the problem and make recommendations on this controversial issue.

There will always be underenumeration in any census: some people, e.g., the undocumented worker, the man behind in child support payments, do not want to be counted and may avoid any sort of questioning by the Federal Government.⁵ Vincent Barabba, Director of the Census Bureau, said, "There is no doubt in my mind that there will be court cases on this issue after the Census."⁶ In anticipation of such problems, the Census Bureau has implemented a number of measures which should improve the accuracy of the 1980 Census.

1. The *Minority Statistics Program* was designed to gain input from minority groups on how to im-

¹It should be noted that responses to census questions are strictly confidential, and no information about an individual is released. No one outside of the Census Bureau, not even the President, is allowed access to individual census records. The Census Bureau has never broken the confidentiality rule, even when under political pressure during World War II to release information on Japanese-Americans. Census Bureau employees are pledged to secrecy and subject to a \$5,000 fine and 5 years in prison if the oath is violated.

TABLE 1
ESTIMATES OF THE AMOUNT AND PERCENT OF NET UNDERENUMERATION OF THE POPULATION, BY SEX
AND RACE: 1950 to 1970

(Numbers in thousands. Composite of analytic estimates, corresponding to set D estimates (adjusted). Figures relate to the resident population. Base of percents is corresponding estimate of corrected population).

Sex and Race	1970 ¹		1960		1950 ²	
	Amount	Percent	Amount	Percent	Amount	Percent
All classes	5,301	2.5	5,063	2.7	5,132	3.3
Male	3,353	3.3	2,990	3.3	2,934	3.8
Female	1,947	1.8	2,073	2.2	2,198	2.8
White, Total	3,446	1.9	3,249	2.0	3,400	2.5
Male	2,175	2.4	1,918	2.4	1,933	2.8
Female	1,271	1.4	1,330	1.6	1,466	2.1
Negro and other races, Total	1,855	6.9	1,814	8.1	1,733	9.7
Male	1,179	8.9	1,071	9.7	1,001	11.2
Female	676	4.9	743	6.6	732	8.2
Negro, Total	1,873	7.7	1,630	8.0	na	na
Male	1,180	9.9	977	9.7	na	na
Female	693	5.5	653	6.3	na	na

na Not available.

1 Based on census figures which have been adjusted for race misclassification in the complete count.

2 Figures relate to 50 states and the District of Columbia.

Note: Set D estimates is the preferred set, a composite of the data, methods, and assumptions used in three other sets.

Source: U.S. Bureau of the Census, *Estimates of Coverage of Population by Sex, Race, and Age: Demographic Analysis*, 1970 Census of Population and Housing, Evaluation and Research Program, PHC(E)-4, 1974.

prove census data on minorities, help minority groups to use census information, and enlist help and cooperation in minority communities. Three strategies are being employed to accomplish this task.

a. The *National Services Program* is carrying the message to minority groups using exhibits and conducting workshops at conferences. Representatives from the Census Bureau hold regular meetings with such national minority organizations as the Urban League.

b. Three *Census Advisory Committees for Minority Populations*—Spanish Origin, Black, Asian and Pacific Islander—have been working closely with the Census Bureau since the mid-1970s. The Advisory Committees meet about twice a year. Their activities include making recommendations on the subject content of the census questionnaire, informing members of their community about the importance and

usefulness of the 1980 Census, observing the census dress rehearsal operations, helping with translations of the census questionnaire, etc. Although there is no formal Advisory Committee for the American Indian Population, the Census Bureau and the Indian tribes have been working together to improve census coverage on reservations.

c. The *Community Services Program* has hired 200 people to work in minority communities for a year prior to April 1, 1980. Three Community Services Specialists have been assigned to New Mexico—Ted Martinez (formerly with the New Mexico Department of Human Services), Ruben Ceballos (formerly with New Mexico State University), and Ernest Jaramillo (former Lieutenant Governor of Isleta Pueblo). Martinez and Jaramillo are based in Albuquerque; Ceballos is based in Las Cruces. They are working with Hispanic, Indian, and Black leaders, community

organizations, and churches. According to Jaramillo: "The tribes already have a count of the number of people living on each reservation. This will provide tribal officials with a benchmark by which to gauge the accuracy of the Census when it is completed. We are a minority within a minority so we have every reason to want to make sure that we have an accurate count in 1980."

In addition to the national and local effort to reach minority groups before April 1, measures have been taken to insure that the operation runs smoothly on Census Day. The census questionnaire has been translated into ten languages, including, for example, Spanish. To reduce costs, translations will be available on request, rather than automatically mailed to each household. Bilingual minority enumerators will be hired as census takers in certain areas of the country. Members of each Indian tribe will be hired to work as door-to-door enumerators on the reservations.

The U.S. Catholic Conference has been approached by representatives from the Census Bureau and the White House hoping to enlist the cooperation of the Catholic Church in counting the nation's Hispanic population—including undocumented workers. What role the U.S. Catholic Conference will play in helping the Census Bureau is undetermined, at this writing, because the Church is concerned about damaging its credibility with Hispanic parishioners. For obvious reasons, the undocumented worker will probably not be eager to complete and return the census questionnaire.

2. In February of this year, an announcement concerning the *Local Review Program* was mailed to 39,000 heads of local government in the United States. This program was designed so that local officials would have the opportunity to review preliminary population and housing counts at the block or enumeration district level for their area before the temporary district offices are closed and before the figures are released. A technical guide describing the types of information that can be used to challenge census counts will be provided. So far, almost 80 percent of the local governmental units in the country have responded favorably by appointing a liaison to work with the Census Bureau. In the absence of an appointed

liaison, the highest elected official will receive the preliminary population and housing counts for review.

3. Local governments have also been invited to form nonpolitical *Complete Count Committees* to generate local publicity for the 1980 Census and to provide the public with information. Because the purpose of Complete Count Committees is to inform the entire community about the census, committee members should represent a broad range of local organizations, groups and interests. Appointed by the chief elected official, committee members can represent neighborhood organizations, minority groups, labor unions, media, school systems, and businesses.

4. A massive publicity campaign is planned for the 1980 Census. Publicity has a strong effect on the mail return rate of the census questionnaire. This was evident during the census dress rehearsals held in 1978. It has been estimated that \$2.1 million is saved for every one percent increase in the mail return rate. The Advertising Council and the New York firm of Ogilvy and Mather are working on the national publicity campaign for the 1980 Census. Promotional kits and/or information packets are being prepared for distribution to all U.S. media. Flyers are to be distributed to 30 million households by the Boy Scouts. Census posters will be displayed in retail businesses and post offices. Messages announcing April 1 as Census Day will be placed in grocery bags, utility bills, bank statements, etc. Celebrities will make spot TV and radio announcements concerning the 1980 Census.

5. The *Special Place Operation* is designed to count those people who do not live in an apartment, house, condominium, or mobile home. Examples of "special" places are jails, nursing homes, flophouses, campgrounds, orphanages, etc. Unconventional enumeration methods, e.g., a census taker stationed in a bus terminal or pool hall, will be employed to count the people residing in such places because of the obvious drawbacks of standard enumeration procedures.

6. Because of the high turnover of enumerators during some of the census dress rehearsals, Census Bureau officials anticipate some difficulty in hiring the enumerators required for the 1980 Census. In addition, because more women are now em-

played outside of the home, this previous source of enumerators is not as available for temporary work during the 1980 Census.

To help solve this problem, the Census Bureau has initiated the *Experimental Student Internship Program*. Fifty to sixty universities located in areas that were underenumerated in 1970 were invited to participate. Under this program, students will receive college credit for taking a course in the use and application of census data; the class will also prepare them to work as census takers during the 1980 Census. While working in the field, students will receive standard census enumerator wages—\$4.00 to \$4.50 an hour. The University of New Mexico was one of the universities invited to participate in the Student Internship Program. The University will offer a six-credit hour course during the 1980 spring semester. The Departments of Economics, Geography, Mathematics, Public Administration, Political Science, and Sociology are involved in the project.

In addition to the Student Internship Program, the Census Bureau will hire 275,000 temporary employees to fill positions ranging from recruiting coordinator to door-to-door enumerator. The Census Bureau will be responsible for recruiting, testing, interviewing, hiring, and evaluating all personnel. The hiring of these employees was exempted from the Civil Service Reform Act of 1978 as the Civil Service system is not designed to hire, train, mobilize, and then disband large numbers of people. As has been the case for the past several decades, preference will be given to persons recommended by the political party of the current President.

Affirmative Action guidelines will be observed in hiring, and, whenever possible, crew leaders and enumerators will be residents of the area in which they are to work. Applicants must pass a written test; some positions require bilingual ability. Because the quality of census data is partially dependent on enumerator job performance, any enumerator caught "cheating," e.g., not canvassing large households because of the time involved, will be terminated; the entire area for which he or she was responsible will be recanvassed.

GEOGRAPHIC PROGRAMS

Social and economic characteristics of the population residing in small areas are invaluable,

especially to the community planner. For example, census data on the number of single parents and the number of women with children under five years of age could be used to conduct a preliminary assessment of the need for a Day Care Center in a particular area. Data on plumbing facilities and overcrowding are useful for targeting neighborhoods in need of housing improvement programs.

Below the county level, census data are reported by tract, census county division, enumeration district, and block. Working with state and local agencies throughout the 1970s, the Census Bureau defined the geographic boundaries of these areas to be effective during the 1980 Census. In addition to providing local officials and agencies the opportunity to help determine census area boundaries, the amount of data released for small areas in printed reports will increase substantially in 1980. For the first time, data on recognized neighborhoods will be available. Block statistics for communities of 10,000 or more will also be published. The census geographic programs are described below.

Contract Program for City Block Statistics

Coverage of the Block Statistics Program has been extended for the 1980 Census to all communities with a population of at least 10,000. In 1970, city block statistics were reported only for urbanized areas. Although the availability of block statistics in New Mexico was extended somewhat through a contract program, Albuquerque, Las Cruces and Santa Fe were the only cities to receive block data from the 1970 Census.

Block statistics will be published for all communities of 10,000 or more. Despite the increased coverage of the regular 1980 Census Block Statistics Program, many local communities still will not receive city block data. The Bureau of the Census provided an opportunity for these smaller communities to contract for the statistics.

Detailed statistics are a prerequisite to effective planning for a community—particularly a community which has been impacted by energy development and rapid population growth. While the need for detailed data is especially acute among energy-impacted communities, the smaller of these communities in New Mexico do not have the financial resources to fund this program.

Recognizing this need, the Four Corners Regional Commission offered the necessary funds to contract for block statistics in energy-impacted communities in New Mexico. A list of 18 energy-impacted communities was provided by the Energy Resources Board and the Community Assistance Council; the maps for each place were provided by regional planning organizations. The Bureau of Business and Economic Research (BBER) volunteered to coordinate the project and set up the contract with the Census Bureau. (The cost of coordinating this program—as well as all the other geographic programs—was contributed by the BBER to help to improve data reported by the 1980 Census for New Mexico.)

Final block statistics will be issued between January and July of 1981. These statistics represent selected percent housing and population items. There will be a separate report for each SMSA and a separate report for New Mexico including all communities of 10,000 or more and those places covered by the contract.

1980 Census Enumeration District Program

Enumeration districts (EDs) represent administrative divisions which are delineated to aid the Census Bureau in conducting the Census in areas where conventional enumeration (as opposed to the mailout/mailback procedure) is still used. EDs are also the smallest geographic units of analysis outside the urbanized areas of SMSAs. As such, they can be particularly useful in small area statistical analysis.

Acknowledging the utility of ED tabulations to local data users, the Census Bureau invited local participation in the delineation of EDs to be used in the 1980 Census. Since the primary purpose of EDs is administrative, the EDs had to be developed in accordance with the Census Bureau's specifications. The following are basic criteria for EDs:

- An ED cannot straddle the boundaries of political and statistical areas, for example: states, counties, census county divisions, and incorporated places.
- ED boundaries must follow physical features—except where they coincide with political or statistical boundaries.
- The size of an ED must represent an adequate workload for an enumerator. The optimum size for an ED is approximately 275 housing

units or 800 people. Additionally, an ED cannot exceed 300 square miles in area.

Within the limits imposed by the Census Bureau specifications, EDs could also be designed to satisfy local statistical needs.

In New Mexico, the BBER was asked to coordinate the ED program for all areas exclusive of Bernalillo, Sandoval and Dona Ana Counties and the Indian reservations.⁶ In lieu of trying to anticipate local statistical needs, the BBER invited local officials to submit their own plans. The BBER delineated EDs in those areas for which local participation was declined and reviewed all plans to insure conformance with the Census Bureau specifications. Final census maps will become available no sooner than late 1980.

Tabulations for EDs from the 1980 Census will be presented in Summary Tape Files 1 and 3. ED data from the 1970 Census is available in the First and Fifth Count summary tapes and the Master Enumeration District List (MED list).

Census Designated Place Program

Since the 1940 Census, the Bureau of the Census has defined unincorporated places for inclusion in census tabulations and publications. Although the name has changed,⁷ the program for the 1980 Census remains essentially the same. The purpose of this program is to define places which would not ordinarily be included as separate places in census publications.

A census designated place (CDP) is a community with no legally-defined boundaries or corporate powers. It is recognized locally as a community—not a subdivision or general urban expansion area. Characteristics of a CDP include a population center with a density of approximately 1,000 persons per square mile and a city-type street pattern. Since CDPs have no legally-defined boundaries, the program is designed not only to identify potential CDPs, but also to delimit each place, preferably along physical features.

In 1977, the BBER was asked to identify and delimit potential CDPs in nonmetropolitan counties.⁸ With the help of local officials, a list of potential CDPs was compiled and submitted to the Bureau of the Census along with maps of each place. Notification of the qualifying CDPs will probably be delayed until the 1980 Census is completed.

Census Statistical Areas Committee (CSAC) Program

The purpose of CSACs is to use local knowledge of the community to delineate and review the boundaries of statistical areas within SMSAs. Committee membership can include representatives from city/county government, libraries, schools, regional planning organizations, universities, public utilities, private business, etc. Because this program is limited to SMSAs, there are only two CSACs in New Mexico—Albuquerque and Las Cruces. Delineation of the 1980 Census tracts is handled by CSACs.

Geographic Base File/Dual Independent Map Encoding (GBF/DIME) System Program

The purpose of this program is to set up GBF/DIME files in those areas which do not have them and to correct, update and extend the coverage of existing GBF/DIME files. A GBF/DIME file is a computerized version of a street map containing all census statistical area boundaries, e.g., blocks, census tracts, plus block-by-block street address ranges, zip codes and X-Y coordinates for street intersections. The use of GBF/DIME is not limited to census data. A number of computer programs have been developed to extend the application of GBF/DIME files. For example, many local governments have used an address-matching program with the GBF/DIME to integrate administrative records. Building permits, police records and public health records can all be coded to a common geographic area.

The GBF/DIME System Program is one of the most successful of the Census Bureau's geographic programs and is a cooperative effort between local agencies and the Census Bureau. The GBF/DIME File for the Albuquerque SMSA is handled by the Middle Rio Grande Council of Governments. A GBF/DIME file for the Las Cruces SMSA has not yet been set up.

Neighborhood Statistics Program

The Neighborhood Statistics Program will provide statistics (similar to those reported for tracts) for recognized neighborhoods in municipalities of 10,000 or more. (Communities of less than 10,000 will be considered on an individual basis.) In order to qualify for this program, a neighborhood must:

- have official recognition by the municipality,

- have nonoverlapping boundaries, and,
- have elected officials or advisory representatives.

In order to receive neighborhood statistics, the chief elected official or representatives must make a written request to the Census Bureau before December 31, 1980. Although there is no charge for the neighborhood data, local officials are obligated to disseminate the information and provide neighborhood maps to local data users.

STANDARD METROPOLITAN STATISTICAL AREAS

Since 1910 the Census Bureau has used "metropolitan" to define single concentrations of dense urban development. Based on commuting patterns, metropolitan areas could contain more than one city and/or more than one county. The definition of "metropolitan" has been revised occasionally. The existing criteria for Standard Metropolitan Statistical Areas (SMSAs) has been criticized because some areas have been designated SMSAs or been included in SMSAs even though they are basically rural or semi-rural in character. The Federal Committee on Standard Metropolitan Statistical Areas began looking into this question in 1977, and, after much public comment, the new criteria were approved in January, 1979. The familiar term SMSA will be replaced with three new concepts.

- 1) Consolidated Metropolitan Statistical Areas (CMSA): "groupings of these closely related areas into large metropolitan or 'megapolitan' complexes."
- 2) Primary Metropolitan Statistical Areas (PMSA): "those metropolitan entities that are most closely associated with their metropolitan neighbors."
- 3) Metropolitan Statistical Areas (MSA): "relatively free-standing, . . . not closely associated with others, and typically surrounded by rural counties."

In addition, there will be four levels of metropolitan statistical areas. (See Figure 1.)

Standard Metropolitan Statistical Area	
Level	Population
A	>1,000,000
B	250,000 to 1,000,000
C	100,000 to 250,000
D	<100,000

The new SMSA criteria will not go into effect until 1982. Publications from the 1980 Census will show data for *current* SMSAs. If any SMSA boundaries are changed because of the new criteria, the same data for the new, modified SMSAs will be republished in 1982.

A number of federal agencies used SMSAs as geographic units for program administration and allocation of funds. For example, the extent to which Medicare reimburses a hospital for patient care is partially based on whether the hospital is located in a metropolitan or non-metropolitan area. Eighty percent of the money from HUD's Community Development Block Grant Program is set aside for metropolitan areas. Whether the effects of the new criteria are harmful or beneficial to a particular metropolitan area will depend on the particular federal program in question. In addition,

"... the Office of Federal Statistical Policy and Standards recommended that the modifications resulting from the 1980 metropolitan area criteria should be neutral in their impact on federal funding. Consequently, the Statistical Policy Coordination Committee has recommended a 'hold harmless' policy beginning in 1979 and extending for five years. In other

words, the re-definitions resulting from the 1980 metropolitan area criteria should not aid or harm individual communities in qualifying for or benefiting from specific federal programs."¹⁰

In 1973, Sandoval County was included as part of the Albuquerque SMSA because of its commuting ties with Bernalillo County. Based on results from the 1970 Census, approximately 49 percent of Sandoval County's labor force works in Bernalillo County. Under the new SMSA rules, Sandoval will have to have a population density of at least 35 persons per square mile if it is to remain in the Albuquerque SMSA. As of 1978, Sandoval had only 6.6 persons per square mile. Thus, it is likely that Sandoval County will be excluded from the Albuquerque SMSA.

Until recently the Albuquerque SMSA was the only SMSA in New Mexico. Early this fall, the City of Las Cruces and County of Dona Ana were designated an SMSA by the Census Bureau. The city commission allocated \$50,000 for a special census to be taken, and the county commission appropriated the remaining required funds. The Census Bureau conducted the census in May, 1979, using 120 enumerators who covered the county in about 4 weeks. Results showed a

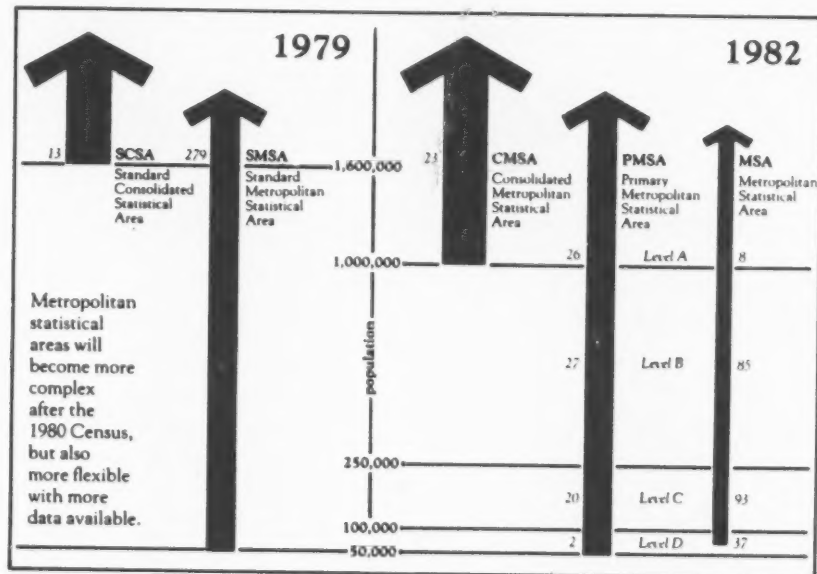


FIGURE 1

Reprinted with permission from *American Demographics* magazine, July/August, 1979. Joseph W. Duncan, "Metropolitan Areas for the 1980s," *American Demographics* (Ithaca, NY: American Demographics, Inc., 1979) Vol. 1, No. 7 (July/August, 1979), p. 28.

population of 50,729 for the urbanized portion of the city and a total county population of 89,953. Because of its new SMSA status, Las Cruces will receive additional federal monies.

The City of Santa Fe also allocated money for a special census to be taken in the spring of 1979. The total population was about 3,300 less than the required 50,000 for an urbanized central city that an SMSA must have. This may have resulted from the decline in household size, from 3.3 persons per household in 1970 compared to 2.7 currently.¹¹

TAKING THE 1980 CENSUS AND QUESTIONNAIRE CONTENT

For the decennial censuses in 1960 and 1970, the Census Bureau placed increasingly greater reliance on self-enumeration and the mailout/mailback technique. In 1970, about 60 percent of the population received the census questionnaire in the mail and were asked to return the form by mail. The door-to-door canvas method was used for the remainder of the population located outside of large urban centers. The use of the mailout/mailback technique will be extended to 90 percent of the country in 1980. A modified form of the door-to-door count will be used in the remaining 10 percent or less populous areas of the country, primarily the Western and Mountain States. (See Figure 2.) In New Mexico, only residents of Bernalillo, Sandoval, Santa Fe, and Los Alamos Counties* will be asked to return the census form by mail. All other persons will be instructed to complete the questionnaire but hold onto it until a census taker comes by to pick it up after April 1.

All households will receive the short form which should take about 15 minutes to complete; one in six households will also receive the long form, which should take an additional 30 minutes to complete. The long form questionnaire for the 1980 Census is contained in Appendix A to this article. The first seven population questions and the first 12 housing items on a short form will be asked of every American and each household. The remaining questions will be asked on a sample basis: one out of every six households will receive the long form except in communities with popula-

tions of 2,500 or less in which one in two samples will be taken.¹² These 16.7 and 50 percent samples will result in an overall national sample of 20 percent for the long form.

A number of factors determine which questions appear on the census questionnaire: 1) the federal government's need to know so that fund allocation can be determined; 2) respondent burden; 3) comparability to previous censuses; 4) processing time and cost; and 5) the availability of similar information from another source. Throughout the 1970s, the Census Bureau received suggestions from a wide variety of sources on the form and content of the 1980 Census questionnaire. For example, some veterinary associations and pet food manufacturers wanted to include an item that would indicate the presence of a pet in a household. (This question will not appear.)

All 1980 Census questions were tested during the 1978 dress rehearsals conducted in Richmond, Virginia, Lower Manhattan, New York, and La Plata and Montezuma Counties, Colorado. Among other things, the dress rehearsals help the Census Bureau decide whether a question needs to be reworded to obtain more accurate responses. For example, "Central or South American" was one of the possible responses to the questions, "Is this person of Spanish/Hispanic origin or descent?" Because too many people thought this response referred to the central or southern portion of the United States, this option was discarded and will not appear on the final version of the questionnaire.¹³ A question on disability was asked in the 1970 Census, but the quality of responses was poor. The term "disability" is open to too much individual interpretation. Different wording and approaches to this question were tried during the dress rehearsals, but there was no appreciable improvement. However, in this case the question on disability will remain because of national and local needs for the data, e.g., implementing affirmative action programs, planning by the U.S. Departments of Transportation and Health, Education, and Welfare.

Many of the items on the 1980 Census questionnaire are the same as, or similar to, questions asked in 1970. (See Table 2.) A number of variations and substitutions, however, reflect the changing times. Some examples follow.

*Subject to change.

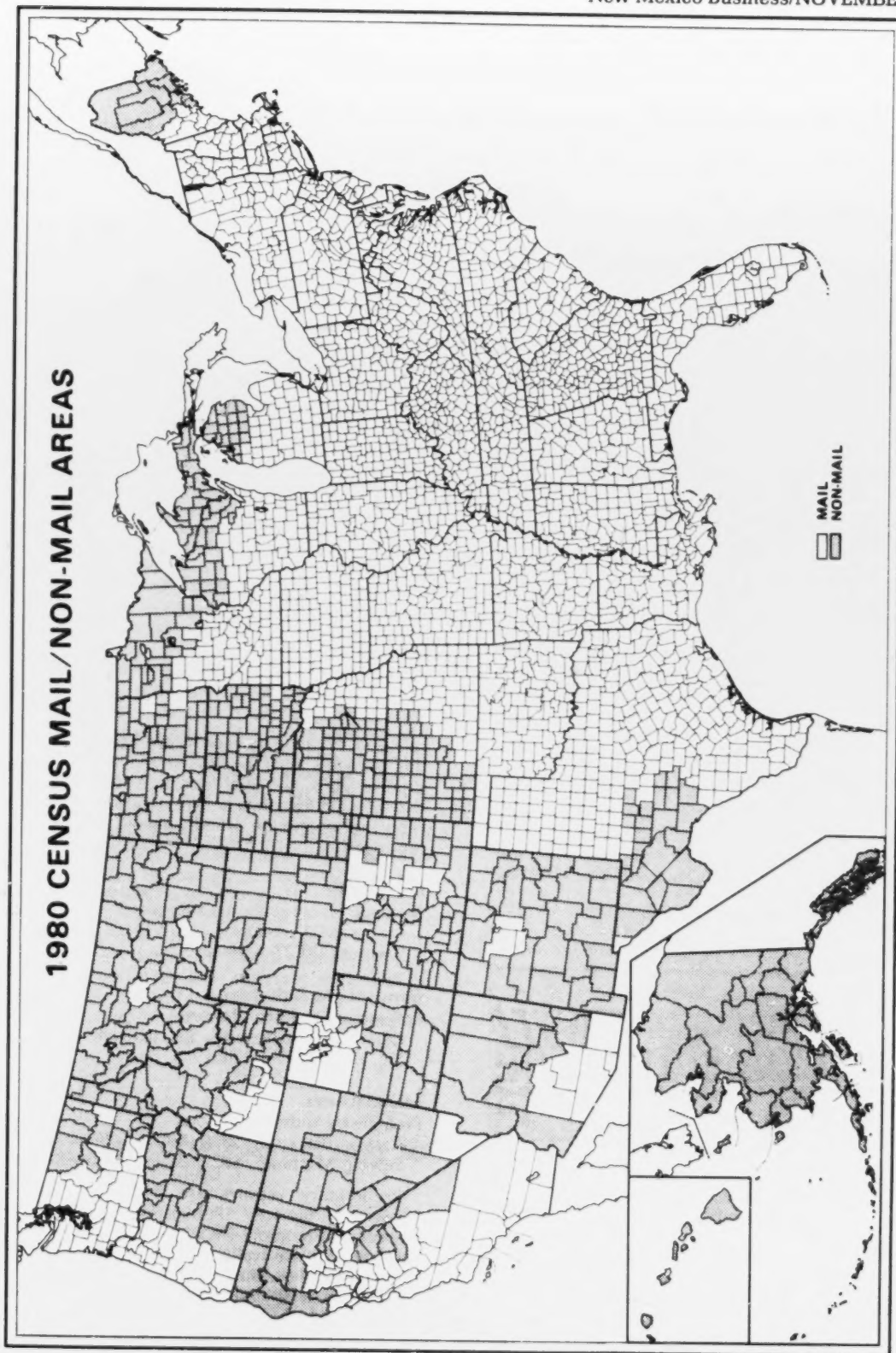


FIGURE 2

Source: U.S. Department of Commerce, Bureau of the Census, *Data User News*, Vol. 14, No. 2 (Washington, D.C.: U.S. Government Printing Office, 1979), p. 4.

TABLE 2
COMPARISON OF POPULATION AND HOUSING QUESTIONS IN THE 1970 AND 1980 CENSUSES

POPULATION QUESTION	1980		1970	
	100% Questionnaire	Sample Questionnaire Only	100% Questionnaire	Sample Questionnaire Only
Age	X		X	
Sex	X		X	
Race	Modified		X	
Household relationship	Modified		X	
Marital status	X		X	
Spanish origin	Modified			X
Place of birth		X		X
Citizenship		X		X
If foreign born, year of immigration		X		X
Place of birth of parents		Omitted		X
Ancestry		New item	--	--
Language used as a child		Omitted		X
Language used at home		New item	--	--
Ability to speak English		New item	--	--
Year moved to present residence		Modified		X
Place of residence 5 years ago		X		X
Major activity 5 years ago		Modified		X
School enrollment		X		X
Public or private school		X		X
Educational attainment		X		X
Industry & occupation 5 years ago		X		X
Veteran status		Omitted		X
Disability		Modified		X
Children ever born		Modified		X
Marital history		X		X
Work status last week		X		X
Hours worked		X		X
Place of work		X		X
Usual travel time to work		New item	--	--
Means of transportation to work		Modified		X
Carpooling		New item	--	--
Temporarily absent from work		X		X
Looking for work last week		X		X
Year last worked		X		X
Industry of current job		X		X
Occupation of current job		X		X
Class of worker of current job		X		X
Work in previous year		X		X
Weeks worked		X		X
Usual hours worked per week last year		New item	--	--
Weeks looking for work or on layoff from a job in 1979		New item	--	--
Amount of income by source		Modified		X
Total income		New item	--	--
Vocational training		Omitted		X
HOUSING QUESTIONS				
Number of units at address	X		X	
Complete plumbing facilities	X		X	
Number of rooms	X		X	
Tenure (whether unit is owned or rented)	X		X	
Condominium identification	X		X	
Value of home (for owner-occupied units & condominiums)	Modified		X	
Rent (for renter occupied units)	X		X	
Vacant for rent, for sale, & period of vacancy	X		X	
Type of unit		Modified		X
Stories in building & presence of elevator		X		X
Year built		X		X
Year moved into this house		X		X
Acreage & crop sales		X		X
Source of water		Modified		X
Sewage disposal		X		X
Heating equipment		Modified		X
Fuels used for house heating, water heating & cooking		X		X
Costs of utilities & fuels		Modified		X
Complete kitchen facilities		X	X	
Number of bedrooms		X		X
Number of bathrooms		X		X
Telephone		X	X	
Air conditioning		X		X
Number of automobiles		X		X
Number of light trucks & vans		New item	--	--
Homeowner shelter costs for mortgage, real estate taxes, & hazard insurance		New item	--	--

Source: Compiled from information provided by the U.S. Bureau of the Census.

- The Census Bureau has always designated the husband as head of the household even if the wife was reported as the head. In 1980, the concept of "household head" will be replaced by the reference person who legally owns or rents the housing unit.
- Questions on mortgage payments, property taxes, and household insurance will be included for the first time. Homeowners as well as renters will be asked to report utility costs. The upper limit of the value of owner-occupied housing units has been raised from \$50,000 to \$200,000. (The State of Hawaii objected that even \$200,000 was too low.)
- There will be 15 rather than 9 possible responses to the question on race. Vietnamese and Eskimo are among the new categories. For the black population, "Negro" was the only choice in 1960; in 1970, "Negro or Black." In 1980, the response will read "Black or Negro."
- Questions on the method of transportation to work have been modified to measure the extent of car pooling.

Items that have been dropped from the 1980 Census are also a sign of the times. For example, there will not be a question on the presence of a basement. Civil Defense officials wanted this information in the 1950s to determine the availability of potential air raid shelters. The question on television sets has been dropped because most households have at least one. The item on dishwashers and clothes-dryers has been deleted because it had low priority in comparison to the other questions. The Census Bureau tries to avoid questions that are more appropriately the province of private market research firms.

Questions on occupation in 1980 are the same as the questions in the 1970 Census; however, the method of classifying occupations will differ substantially. A new system of classification, Standard Occupational Classification (SOC), has been developed for use by Federal Statistical agencies (U.S. Department of Commerce, 1977). Although the SOC represents an improvement in precision, it is not comparable with previous census classifications. The need to establish a useful, standardized system of classifying occupations

simply offset the need to preserve comparability with previous censuses.

In addition to the standard census items, a supplemental questionnaire will be distributed on all Indian reservations. (part of Alaska will be excluded.) This supplemental form was developed in response to criticism that much of the standard census questionnaire is not relevant to reservation life and would not give Indian communities and government agencies the information they need. A supplemental questionnaire was tested on the Ute Reservation during the census dress rehearsal held in La Plata and Montezuma Counties (Colorado) during the spring of 1978. Based on the test results and recommendations and comments received, the following items will appear in the 1980 Supplementary Questionnaire for American Indians:

<i>Population</i>	<i>Housing</i>
Tribal affiliation	Source of water
Tribal enrollment	Public sewer connection
School enrollment	Source of heat
Educational attainment	Year structure built
Year moved to reservation	Complete kitchen facilities
Place of residence one year ago	Telephone
Health services received	Electrical lighting
Place where health care received	Material used for floors
Time traveled to health care facility	Material for outside walls
Method of payment for health care	
Work last year (1979)	

The sample for the supplemental questionnaire will be taken at the same time as the regular census. Conventional door-to-door enumeration will be performed by people living on the reservations who are hired as census takers.

1980 CENSUS PUBLICATIONS AND COMPUTER TAPES

The Census Bureau will begin processing the data from the census questionnaire shortly after April 1, 1980. Massive amounts of data—literally

millions of statistics—will be released in printed reports, computer tapes, and microfiches. The first reports are tentatively scheduled for release in the fall of 1980. These Preliminary Reports will contain *unofficial* population and housing counts by state. The counts released in the Final Reports will supersede all preliminary data. Reports based on 100 percent items will then be released, followed by publications containing sample data. The Summary Tape Files which contain the most detailed data that are available publicly will be released by the Census Bureau when they become available from late-1980 to mid-1982. (For more detail on tentative release dates, see Table 3.) Printed reports and summary tapes for the less populous states generally will be released first, and the national report in the same series, last. There might be as much as a nine-month difference between the appearance of the first state report and that of the national report.

It should be stressed that all release dates are tentative. The top priority of the Census Bureau is to produce the final state population totals that must be delivered to the President by January 1, 1980. Reports containing 100 percent and sample characteristics may be delayed if there is a conflict.

Although much of the data to be presented in the 1980 reports will be similar to that contained in 1970 publications, some differences will be important to users of census data. These differences take the form of expanded coverage. For example, the printed 1980 reports will include:

- block statistics for all incorporated places with populations of 10,000 or more,
- census tract data for all tracted non-metropolitan counties, and
- more data and cross tabulations by race.

The census computer tapes are "summary" in nature, i.e., no information on individuals or individual households is released. The summary tapes include more extensive subject matter in greater geographic detail than do the printed reports. The 1980 summary tapes will be similar to those released in 1970. However, the 1980 tapes will include:

- more cross-tabulations and more data by race,
- subtotals, medians, and means, and

- summaries of Indian reservations.

Much of the information available on the Summary Tapes will also be reproduced on microfiche. How extensive this program will be has not been determined.

The Census Bureau developed a limited number of computer programs to be used with the 1970 Census summary tapes. Michael Garland, Chief of the Data User Services Division at the Census Bureau, said, "Hundreds of thousands of dollars were spent after the 1970 Census by cities, counties, and states—public bodies spending public money—to write their own computer programs and process the tapes."¹⁴ The Census Bureau has developed more extensive programs to be used for processing the 1980 summary tapes. The 1980 programs would allow users to put the data into different formats, combine information from different tapes and/or different geographic regions, etc. These new programs will avoid much of the expense and duplication of efforts previously mentioned.

Conclusion

Upon completion, the 1980 Census will have cost \$1 billion, or \$4 per person.¹⁵ Because of the usefulness of census data to private companies, individuals, and to federal, state, and local government, the time, money, and effort required to plan and conduct the 1980 Census will have been well spent. In fact, Congress mandated in 1976 that a census be taken every five years. Planning is currently underway for the 1985 Census; a decision about the scope of the effect should be made by mid-1980. The 1985 Census is not likely to be a full-scale census. It may include only a population and housing count for all states, counties, and incorporated places as well as some population characteristics based on sample data.

David Kaplan, Chief Planner for the 1970 and 1980 Censuses, remarked that "[t]he Census is no longer merely the source of interesting facts to put in the *Statistical Abstract* or an encyclopedia. It is now an action instrument which is critically involved in how the national pie—social, economic, and political—is cut."¹⁶ In short, it pays to be counted.

Table 3. Tentative release dates of 1980 census data, by type, geographic area, and subject content

Publication	Geographic area covered	Subject content	Expected availability
100-PERCENT DATA			
PHC(P). Preliminary Population and Housing Unit Counts (field counts) — State reports and U.S. summary report	States, counties, county subdivisions, incorporated places, SMSA's, congressional districts	Preliminary population and housing unit counts	August - October 1980
PHC(V). Final Population and Housing Unit Counts — State reports and U.S. summary report	States, counties, county subdivisions, incorporated places, SMSA's, congressional districts	Official population and housing unit counts	November 1980 - February 1981
PHC(1). Block Statistics — SMSA reports and State reports for blocked areas outside SMSA's	SMSA's, places of 10,000 or more, other areas with contracts for block statistics, tracts, blocks	Summary 100-percent population and housing data	January - July 1981
PHC(2). Census Tracts (part) — SMSA reports and State reports for places of 10,000 or more outside SMSA's	States, SMSA's, incorporated places, functioning general purpose county subdivisions	Summary 100-percent population and housing data	November 1980 - April 1982
PHC(3). Summary Characteristics for Governmental Units (part) — State reports	SMSA's, central cities, places of 10,000 or more in tracted areas, tracts	100-percent population and housing data distributions	September 1981 - April 1982
PHC(1)-A. Number of Inhabitants — State reports and U.S. summary report	States, counties, SMSA's urbanized areas, county subdivisions, places	Official population counts	December 1980 - April 1981
PC(1)-B. General Population Characteristics — State reports and U.S. summary report	States, counties, SMSA's, urbanized areas, county subdivisions, places of 1,000 or more, Indian reservations, Alaskan native villages	100-percent population data distributions	February - August 1981
HC(1)-A. General Housing Characteristics — State reports and U.S. summary reports	States, counties, county subdivisions, SMSA's, urbanized areas, places of 1,000 or more, Indian reservations, Alaskan native villages	100-percent housing data distributions	February - August 1981
SAMPLE DATA			
PHC(2). Census Tract Reports (part)	See 100-percent counterpart	Sample summary population and housing data	September 1981 - April 1982
PHC(3). Characteristics for Governmental Units (part)	See 100-percent counterpart	Sample population and housing data distributions	September 1981 - April 1982
PC(1)-C. General Social and Economic Characteristics — State reports and U.S. summary report	States, counties, SMSA's, urbanized areas, places of 2,500 or more, Indian reservations, Alaskan native villages	Sample population data distributions	September 1981 - April 1982
PC(1)-D. Detailed Population Characteristics — State reports and U.S. summary report	States, SMSA's of 250,000 or more, large cities (selected tables)	Sample population data cross-tabulations	December 1981 - September 1982
PC(2). Population Subject Reports — Series of subject-oriented reports	United States, regions (selected reports)	Detailed sample population data cross-tabulations on specific subjects	1982
HC(1)-B. Detailed Housing Characteristics — State reports and U.S. summary reports	States, counties, SMSA's, urbanized areas, and places of 2,500 or more	Sample housing data distributions	September 1981 - April 1982
HC(2). Metropolitan Housing Characteristics	SMSA's, and component large cities	Detailed sample housing data cross-tabulations	December 1981 - September 1982
HC(3). Subject Reports — Series of subject-oriented reports	United States, selected 15 SMSA's	Detailed sample housing data	1982
HC(4). Components of Inventory Change — Based on a sample survey in fall of 1980	United States	Detailed sample housing data	1982
HC(5). Residential Finance — Based on a sample survey in fall of 1980	United States, regions	Detailed sample housing data	1982
SUMMARY TAPE FILES (STF)			
STF 1	Blocks, enumeration districts (ED), or block groups, tracts, places, Minor civil divisions (MCD), census civil divisions (CCD), urbanized areas (UA), congressional districts, States	100-percent population and housing data	November 1980 - July 1981
STF 2	Tracts, places of 1,000 or more, MCD's, CCD's, counties, SMSA's, urbanized areas, States	100-percent population and housing data	January - August 1981
STF 3	ED's or block groups, tracts, MCD's, CCD's, counties, SMSA's, States, ZIP code areas, incorporated places	Sample population and housing data	September 1981 - April 1982
STF 4	Tracts, places of 2,500 or more, MCD's, CCD's, counties, SMSA's, urbanized areas, States	Sample population and housing data	September 1981 - April 1982
STF 5	States, SMSA's, large cities, and selected counties	Sample population and housing data	April - September 1982
Public Use Microdata Samples (PUMS)	States and large SMSA's	Individual data records (no names or addresses — geographic areas identified will be large enough to avoid disclosure)	May - August 1982

Source: Roger A. Herriot, "The 1980 Census: Countdown for a Complete Count," *Monthly Labor Review*, (Washington, D.C.: Bureau of Labor Statistics, U.S. Department of Labor, 1979) Vol. 102, No. 9 (September, 1979), p. 9.

Appendix A

2. provides information on type of household (husband/wife, other type of family, or single person households) and the number of persons in the household. Because of changes in society since 1970, the concept of household "head" has been replaced with that of a reference person in whose name the dwelling unit is owned or rented. This person is identified in column one. This key change means data will not be exactly comparable to "male-headed" or "female-headed" household data from the 1970 Census, but it will be easy to identify families and other types of households. In many tabulations characteristics will be shown for both husband and wife where they were shown previously only for the head of family households.

The questionnaire has space for up to seven household members to provide answers. We show only column 1. The other columns are identical except for question 2, which asks relationship. In question 2, columns 2 through 7 have the following language instead of the "Start in this column" language: "If relative of person in column 1: Husband/wife; Son/daughter; Brother/sister; Father/mother; Other relative (specify). If not related to person in column 1: Roomer, boarder; Partner, roommate; Paid employee; Other nonrelative (specify)."

Two of the categories are new: "Partner, roommate" and "Paid employee." The first was added to obtain statistics on the growing number of people who live together without being married.

3. same as in 1970.

4. expands the possible answers about race from nine in 1970 to 15. As a result we can expect a few Samoans to turn up in places like Kansas City, just because that alternative is listed. The expansion is the result of growing ethnic awareness, but note that the word "race" does not appear.

5. same as in 1970.

6. same as in 1970.

7. for the first time asks all Americans a single question about Spanish origin. These data will not be comparable with previous censuses. In 1970, this question was asked of a maximum of 15 percent of the population, and the data were tabulated differently for different regions of the country. This question ends the population questions asked of all Americans. The next three questions appear on the long form questionnaire only.

8. similar to 1970, but what was previously called "parochial" schools is now called "church related."

9. similar to 1970, but the highest college level asked for then was six or more years.

10. same as in 1970.

Note: Because of our format we have reduced the size of the questionnaire by about 15 percent and omitted certain instructions to respondents and Census Bureau use boxes. The census questionnaire also will have blue shading, not gray.

Here are the QUESTIONS ↓	These are the columns for ANSWERS → Please fill one column for each person listed in Question 1.	PERSON in column 1		PERSON in column 2
		Last name First name Middle initial		Last name First name Middle initial
2. How is this person related to the person in column 1? Fill one circle. If "Other relative" of person in column 1, give exact relationship, such as mother-in-law, niece, grandson, etc.	START in this column with the household member (or one of the members) in whose name the home is owned or rented. If there is no such person, start in this column with any adult household member.	If relative of person in column 1: ☐ Husband ☐ Son/daughter ☐ Brother/sister If not related to person in column 1: ☐ Roomer, boarder ☐ Partner, roommate ☐ Paid employee		
3. Sex. Fill one circle.	Male ☐ Female ☐	Male ☐		
4. Is this person — Fill one circle.	White ☐ Black or Negro ☐ Asian Indian ☐ Hawaiian ☐ Japanese ☐ Guamanian ☐ Chinese ☐ Filipino ☐ Samoan ☐ Eskimo ☐ Korean ☐ Aleut ☐ Vietnamese ☐ Indian (Amer.) ☐ Other — Specify _____ Print tribe _____	White ☐ Black or Negro ☐ Asian Indian ☐ Hawaiian ☐ Japanese ☐ Guamanian ☐ Chinese ☐ Filipino ☐ Samoan ☐ Eskimo ☐ Korean ☐ Aleut ☐ Vietnamese ☐ Indian (Amer.) ☐ Other — Specify _____ Print tribe _____		
5. Age, and month and year of birth	a. Age at last birthday b. Month of birth c. Year of birth	a. Age at last birthday b. Month of birth c. Year of birth		
6. Marital status Fill one circle.	☐ Now married ☐ Separated ☐ Widowed ☐ Never married ☐ Divorced	☐ Now married ☐ Separated ☐ Widowed ☐ Never married ☐ Divorced		
7. Is this person of Spanish/Hispanic origin or descent? Fill one circle.	☐ No (not Spanish/Hispanic) ☐ Yes, Mexican, Mexican-American, Chicano ☐ Yes, Puerto Rican ☐ Yes, Cuban ☐ Yes, other Spanish/Hispanic	☐ No (not Spanish/Hispanic) ☐ Yes, Mexican, Mexican-American, Chicano ☐ Yes, Puerto Rican ☐ Yes, Cuban ☐ Yes, other Spanish/Hispanic		
8. Since February 1, 1980, has this person attended regular school or college at any time? Fill one circle. Count nursery school, kindergarten, elementary school and schooling which leads to a high school diploma or college degree.	☐ No, has not attended since February 1 ☐ Yes, public school, public college ☐ Yes, private, church-related ☐ Yes, private, not church-related	☐ No, has not attended since February 1 ☐ Yes, public school, public college ☐ Yes, private, church-related ☐ Yes, private, not church-related		
9. What is the highest grade (or year) of regular school this person has ever attended? Fill one circle. If now attending school, mark grade person is in. If high school was finished by equivalency test (GED), mark "12."	Highest grade attended: ☐ Nursery school ☐ Kindergarten Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 ☐ College (academic year) 1 2 3 4 5 6 7 8 or more ☐ Never attended school — Skip question 10	Highest grade attended: ☐ Nursery school ☐ Kindergarten Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 ☐ College (academic year) 1 2 3 4 5 6 7 8 or more ☐ Never attended school — Skip question 10		
10. Did this person finish the highest grade (or year) attended? Fill one circle.	☐ Now attending this grade (or year) ☐ Finished this grade (or year) ☐ Did not finish this grade (or year)	☐ Now attending this grade (or year) ☐ Finished this grade (or year) ☐ Did not finish this grade (or year)		

H1. Did you leave anyone out of Question 1 because you were not sure if the person should be listed — for example, a new baby still in the hospital, a lodger who also has another home, or a person who stays here once in a while and has no other home?

☐ Yes — On page 20 give name(s) and reason left out.
☐ No

H2. Did you list anyone in Question 1 who is away from home now — for example, on a vacation or in a hospital?

☐ Yes — On page 20 give name(s) and reason person is away.
☐ No

H3. Is anyone visiting here who is not already listed?

☐ Yes — On page 20 give name of each visitor for whom there is no one at the home address to report the person to a census taker.
☐ No

H4. How many living quarters, occupied and vacant, are at this address?

☐ One
☐ 2 apartments or living quarters
☐ 3 apartments or living quarters
☐ 4 apartments or living quarters
☐ 5 apartments or living quarters
☐ 6 apartments or living quarters
☐ 7 apartments or living quarters
☐ 8 apartments or living quarters
☐ 9 apartments or living quarters
☐ 10 or more apartments or living quarters
☐ This is a mobile home or trailer

H5. Do you enter your living quarters —

☐ Directly from the outside or through a common or public hall?
☐ Through someone else's living quarters?

H6. Do you have complete plumbing facilities in your living quarters, that is, hot and cold piped water, a flush toilet, and a bathtub or shower?

☐ Yes, for this household only
☐ Yes, but also used by another household
☐ No, have some but not all plumbing facilities
☐ No plumbing facilities in living quarters

H7. How many rooms do you have in your living quarters? Do not count bathrooms, porches, balconies, flaps, halls, or hallways.

☐ 1 room ☐ 4 rooms ☐ 7 rooms
☐ 2 rooms ☐ 5 rooms ☐ 8 rooms
☐ 3 rooms ☐ 6 rooms ☐ 9 or more rooms

H8. Are your living quarters —

☐ Owned or being bought by you or by someone else in this household?
☐ Rented for cash rent?
☐ Occupied without payment of cash rent?

H9. Is this apartment (house) part of a condominium?

☐ No
☐ Yes, a condominium

H10. If this is a one-family house —

a. Is the house on a property of 10 or more acres?
☐ Yes ☐ No

b. Is any part of the property used as a commercial establishment or medical office?
☐ Yes ☐ No

H11. If you live in a one-family house or a condominium unit which you own or are buying —

What is the value of this property, that is, how much do you think this property (house and lot or condominium unit) would sell for if it were for sale?

Do not answer this question if this is —

☐ A mobile home or trailer
☐ A house on 10 or more acres
☐ A house with a commercial establishment or medical office on the property

☐ Less than \$10,000 ☐ \$50,000 to \$54,999
☐ \$10,000 to \$14,999 ☐ \$55,000 to \$59,999
☐ \$15,000 to \$17,499 ☐ \$60,000 to \$64,999
☐ \$17,500 to \$19,999 ☐ \$65,000 to \$69,999
☐ \$20,000 to \$22,499 ☐ \$70,000 to \$74,999
☐ \$22,500 to \$24,999 ☐ \$75,000 to \$79,999
☐ \$25,000 to \$27,499 ☐ \$80,000 to \$89,999
☐ \$27,500 to \$29,999 ☐ \$90,000 to \$99,999
☐ \$30,000 to \$34,999 ☐ \$100,000 to \$124,999
☐ \$35,000 to \$39,999 ☐ \$125,000 to \$149,999
☐ \$40,000 to \$44,999 ☐ \$150,000 to \$199,999
☐ \$45,000 to \$49,999 ☐ \$200,000 or more

H12. If you pay rent for your living quarters —

What is the monthly rent?

If rent is not paid by the month, see the instruction guide on how to figure a monthly rent.

☐ Less than \$50 ☐ \$160 to \$169
☐ \$50 to \$59 ☐ \$170 to \$179
☐ \$60 to \$69 ☐ \$180 to \$189
☐ \$70 to \$79 ☐ \$190 to \$199
☐ \$80 to \$89 ☐ \$200 to \$224
☐ \$90 to \$99 ☐ \$225 to \$249
☐ \$100 to \$109 ☐ \$250 to \$274
☐ \$110 to \$119 ☐ \$275 to \$299
☐ \$120 to \$129 ☐ \$300 to \$349
☐ \$130 to \$139 ☐ \$350 to \$399
☐ \$140 to \$149 ☐ \$400 to \$499
☐ \$150 to \$159 ☐ \$500 or more

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A4. Block number	A6. Serial number	B. Type of unit or quarters	C1. Is this unit for —	D. Months vacant	F. Total persons
		Occupied	☐ Year round use	☐ Less than 1 month	
		☐ Continuation	☐ Seasonal/Mig. — Skip C2, C3, and D.	☐ 1 up to 2 months	
		Vacant	C2. Vacancy status	☐ 2 up to 6 months	
		☐ Regular	☐ For rent	☐ 6 up to 12 months	
		☐ Usual home elsewhere	☐ For sale only	☐ 1 year up to 2 years	
		Group quarters	☐ Rented or sold, not occupied	☐ 2 or more years	
		☐ First form	☐ Held for occasional use	E. Indicators	
		☐ Continuation	☐ Other vacant	1. ☐ Mail return	
			C3. Is this unit boarded up?	2. ☐ Pop./F	
			☐ Yes ☐ No		

H1-H3. the housing part of both the 100 percent and sample questionnaires starts with these three questions to make sure that everyone in the household was counted.

H4. same as in 1970. This question is asked so that census personnel can be sure that all units at an address are enumerated. Question H13 provides superior data on the number of dwelling units in the structure. Like the first three housing questions, H4 is intended to check coverage.

H5. has the objective of making certain the respondent occupies a bona fide dwelling unit, not just a few rooms in someone else's house.

H6. one of the few questions left from a series of questions in the 1970 Census which attempted to measure housing quality.

H7. same as in 1970.

H8. same as in 1970.

H9. for the first time poses a separate question on condominiums. The term "cooperative" also appeared on the test questionnaires but was misunderstood by many respondents.

H10. separates farmhouses, estates, and partly commercial structures from single family dwelling units. Value is not tabulated for these types of units.

H11. asks value. There are 24 categories instead of the 11 in 1970, when the highest value was only \$50,000 or more.

H12. also shows the impact of inflation. The highest interval in 1970 was \$300 or more. It is now \$500 or more, and 24 categories appear instead of the former 14.

H12 ends the housing questions asked of all Americans. The Census Bureau estimates it takes 15 minutes to answer the 19 population and housing questions on the short questionnaire, while the remaining questions add another 30 minutes.

H13. Which best describes this building? <i>Include all apartments, flats, etc., even if vacant.</i> ☐ A mobile home or trailer ☐ A one-family house detached from any other house ☐ A one-family house attached to one or more houses ☐ A building for 2 families ☐ A building for 3 or 4 families ☐ A building for 5 to 9 families ☐ A building for 10 to 19 families ☐ A building for 20 to 49 families ☐ A building for 50 or more families ☐ A boat, tent, van, etc.	H21.a. Which fuel is used most for house heating? ☐ Gas: from underground pipes serving the neighborhood ☐ Gas: bottled, tank, or LP ☐ Electricity ☐ Fuel oil, kerosene, etc. ☐ Coal or coke ☐ Wood ☐ Other fuel ☐ No fuel used b. Which fuel is used most for water heating? ☐ Gas: from underground pipes serving the neighborhood ☐ Gas: bottled, tank, or LP ☐ Electricity ☐ Fuel oil, kerosene, etc. ☐ Coal or coke ☐ Wood ☐ Other fuel ☐ No fuel used	CENSUS USE H22a. 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H14.a. How many stories (floors) are in this building? <i>Count an attic or basement as a story if it has any finished rooms for living purposes.</i> ☐ 1 to 3 — Ship to H15 ☐ 4 to 6 ☐ 7 to 12 ☐ 13 or more stories b. Is there a passenger elevator in this building? ☐ Yes ☐ No	c. Which fuel is used most for cooking? ☐ Gas: from underground pipes serving the neighborhood ☐ Gas: bottled, tank, or LP ☐ Electricity ☐ Fuel oil, kerosene, etc. ☐ Coal or coke ☐ Wood ☐ Other fuel ☐ No fuel used	H22b. 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H15.a. Is this building — ☐ On a city or suburban lot, or on a place of less than 1 acre? — Ship to H16 ☐ On a place of 1 to 9 acres? ☐ On a place of 10 or more acres?	H22. What are the cost of utilities and fuels for your living quarters? a. Electricity \$ _____ 00 OR ☐ Included in rent or no charge Average monthly cost _____ ☐ Electricity not used	H22c. 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
b. Last year, 1978, did sales of crops, livestock, and other farm products from this place amount to — ☐ Less than \$50 (or None) ☐ \$50 to \$249 ☐ \$250 to \$599 ☐ \$600 to \$999 ☐ \$1,000 to \$2,499 ☐ \$2,500 or more	b. Gas \$ _____ 00 OR ☐ Included in rent or no charge Average monthly cost _____ ☐ Gas not used	H22d. 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H16. Do you get water from — ☐ A public system (city water department, etc.) or private company? ☐ An individual drilled well? ☐ An individual dug well? ☐ Some other source (a spring, creek, river, cistern, etc.)?	c. Water \$ _____ 00 OR ☐ Included in rent or no charge Yearly cost _____ ☐ These fuels not used	H22e. 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H17. Is this building connected to a public sewer? ☐ Yes, connected to public sewer ☐ No, connected to septic tank or cesspool ☐ No, use other means	H23. Do you have complete kitchen facilities? Complete kitchen facilities are a sink with piped water, a range or cookstove, and a refrigerator. ☐ Yes ☐ No	H22f. 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H18. About when was this building originally built? Mark when the building was first constructed, not when it was remodeled, added to, or converted. ☐ 1979 or 1980 ☐ 1975 to 1978 ☐ 1970 to 1974 ☐ 1960 to 1969 ☐ 1950 to 1959 ☐ 1940 to 1949 ☐ 1939 or earlier	H24. How many bedrooms do you have? <i>Count rooms used mainly for sleeping even if used also for other purposes.</i> ☐ No bedroom ☐ 1 bedroom ☐ 2 bedrooms ☐ 3 bedrooms ☐ 4 bedrooms ☐ 5 or more bedrooms	H22g. 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H19. When did the person listed in column 1 move into this house (or apartment)? ☐ 1979 to 1980 ☐ 1975 to 1978 ☐ 1970 to 1974 ☐ 1960 to 1969 ☐ 1950 to 1959 ☐ 1949 or earlier ☐ Always lived here	H25. How many bathrooms do you have? <i>A complete bathroom is a room with flush toilet, bathtub or shower, and wash basin with piped water.</i> <i>A half bathroom has at least a flush toilet or bathtub or shower, but does not have all the facilities for a complete bathroom.</i> ☐ No bathroom, or only a half bathroom ☐ 1 complete bathroom ☐ 1 complete bathroom, plus half bath(s) ☐ 2 or more complete bathrooms	PH 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H20. How are your living quarters heated? <i>Fill one circle for the kind of heat used most.</i> ☐ Steam or hot water system ☐ Central warm-air furnace with ducts to the individual rooms (Do not count electric heat pumps here.) ☐ Electric heat pump ☐ Other built-in electric units (permanently installed in wall, ceiling, or baseboard) ☐ Floor, wall, or pipeless furnace ☐ Room heaters with flue or vent, burning gas, oil, or kerosene ☐ Room heaters without flue or vent, burning gas, oil, or kerosene (not portable) ☐ Fireplaces, stoves, or portable room heaters of any kind ☐ No heating equipment	H26. Do you have a telephone in your living quarters? ☐ Yes ☐ No H27. Do you have air conditioning? ☐ Yes, a central air-conditioning system ☐ Yes, 1 individual room unit ☐ Yes, 2 or more individual room units ☐ No H28. How many automobiles are kept at home for use by members of your household? ☐ None ☐ 1 automobile ☐ 2 automobiles ☐ 3 or more automobiles H29. How many vans or trucks of one-ton capacity or less are kept at home for use by members of your household? ☐ None ☐ 1 van or truck ☐ 2 vans or trucks ☐ 3 or more vans or trucks	H22h. 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9

Please answer H30-H32 if you live in a one-family house which you own or are buying, unless this is -

- A mobile home or trailer
- A house on 10 or more acres
- A condominium unit
- A house with a commercial establishment or medical office on the property

If any of these, or if you rent your unit or this is a multi-family structure, skip H30 to H32 and turn to page 6.

H30. What were the real estate taxes on this property last year?

\$.00 OR ☐ None

H31. What is the annual premium for fire and hazard insurance on this property?

\$.00 OR ☐ None

H32a. Do you have a mortgage, deed of trust, contract to purchase, or similar debt on this property?

☐ Yes, mortgage, deed of trust, or similar debt
☐ Yes, contract to purchase
☐ No - Skip to page 6

b. Do you have a second or junior mortgage on this property?

☐ Yes ☐ No

c. How much is your total regular monthly payment to the lender? Also include payments on a contract to purchase and to lenders holding second or junior mortgages on this property.

\$.00 OR ☐ No regular payment required - Skip to page 6

d. Does your regular monthly payment (amount entered in H32c) include payments for real estate taxes on this property?

☐ Yes, taxes included in payment
☐ No, taxes paid separately or taxes not required

e. Does your regular monthly payment (amount entered in H32c) include payments for fire and hazard insurance on this property?

☐ Yes, insurance included in payment
☐ No, insurance paid separately or no insurance

Please turn to page 6.

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H13. boats, vans, and tents have been added to the possible answers. Otherwise, it is the same as a question asked in 1970.

H14. same as in 1970.

H15. same as in 1970.

H16. a slight variation from the 1970 question in that the respondent is asked to differentiate a drilled well from a dug well.

H17. same as in 1970.

H18. same as in 1970.

H19. asked in 1970, but of each person in the household, and appeared in the population section.

H20. same as in 1970 except that the choice "electric heat pump" has been added, and an open-ended "other" choice has been eliminated.

H21. same as in 1970.

H22. asked only of renters in 1970. Now all sampled households are expected to answer. Census tests show that respondents almost always overstate their utility costs.

H23. asked in 1970, but on the short form.

H24. same as in 1970.

H25. asked in 1970, except the highest category was "3 or more" bathrooms.

H26. on the 100 percent questionnaire in 1970 and asked differently: Is there a telephone on which people in your living quarters can be called? If the answer was yes, the respondent was asked to write down the phone number. The simpler form for 1980 may produce better results.

H27. same as in 1970.

H28. same as in 1970.

H29. a new question reflecting the substantial increase in the number of vans and trucks.

H30-H32. all new. Their purpose is to obtain a measure of total shelter costs for one-family owner-occupied units. The Census Bureau does not plan to tabulate these questions separately, but to combine them with H22 for a single tabulation of "total shelter costs."

1	2	4	2	4	2	4
S.S.	1 1 1 1 1 1	1 1 1 1 1 1	S.S.	1 1 1 1 1 1	S.S.	1 1 1 1 1 1
Yes	3 3 3 3 3 3	3 3 3 3 3 3	Yes	3 3 3 3 3 3	Yes	3 3 3 3 3 3
No	7 7 7 7 7 7	7 7 7 7 7 7	No	7 7 7 7 7 7	No	7 7 7 7 7 7
4	2	4	5	2	4	6
S.S.	1 1 1 1 1 1	1 1 1 1 1 1	S.S.	1 1 1 1 1 1	S.S.	1 1 1 1 1 1
Yes	3 3 3 3 3 3	3 3 3 3 3 3	Yes	3 3 3 3 3 3	Yes	3 3 3 3 3 3
No	7 7 7 7 7 7	7 7 7 7 7 7	No	7 7 7 7 7 7	No	7 7 7 7 7 7
7	2	4	GQ	H30	H31	H32c
S.S.	1 1 1 1 1 1	1 1 1 1 1 1		1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1
Yes	3 3 3 3 3 3	3 3 3 3 3 3		3 3 3 3 3 3	3 3 3 3 3 3	3 3 3 3 3 3
No	7 7 7 7 7 7	7 7 7 7 7 7		7 7 7 7 7 7	7 7 7 7 7 7	7 7 7 7 7 7

Name of Person 1 on page 2: Last name First name Middle initial		16. When was this person born? ☐ Born before April 1965 — Please go on with questions 17-33 ☐ Born April 1965 or later — Turn to next page for next person		22a. Did this person work at any time last week? ☐ Yes — Fill this circle if this person worked full time or part time. (Count part-time work such as delivering papers, or helping without pay in a family business or farm. Also count active duty in the Armed Forces.) ☐ No — Fill this circle if this person did not work, or did only own housework, school work, or volunteer work.	
11. In what State or foreign country was this person born? Print the State where this person's mother was living when this person was born. Do not give the location of the hospital unless the mother's home and the hospital were in the same State.		17. In April 1975 (five years ago) was this person — a. On active duty in the Armed Forces? ☐ Yes ☐ No b. Attending college? ☐ Yes ☐ No c. Working at a job or business? ☐ Yes, full time ☐ No ☐ Yes, part time		Skip to 25	
Name of State or foreign country; or Puerto Rico, Guam, etc.		18. Is this person a veteran of active-duty military service in the Armed Forces of the United States? If service was in National Guard or Reserves only, see instruction guide. ☐ Yes ☐ No — Skip to 19		b. How many hours did this person work last week (at all jobs)? Subtract any time off; add overtime or extra hours worked.	
12. If this person was born in a foreign country — a. Is this person a naturalized citizen of the United States? ☐ Yes, a naturalized citizen ☐ No, not a citizen ☐ Born abroad of American parents		19. Does this person have a physical, mental, or other health condition which has lasted for 6 or more months and which — a. Limits the kind or amount of work this person can do at a job? Yes ☐ No ☐ b. Prevents this person from working at a job? Yes ☐ No ☐ c. Limits or prevents this person from using public transportation? Yes ☐ No ☐		Hours	
b. When did this person come to the United States to stay? ☐ 1975 to 1980 ☐ 1965 to 1969 ☐ 1950 to 1959 ☐ 1970 to 1974 ☐ 1960 to 1964 ☐ Before 1950		20. Was active-duty military service during — Fill a circle for each period in which this person served. ☐ May 1975 or later ☐ Vietnam era (August 1964–April 1975) ☐ February 1955–July 1964 ☐ Korean conflict (June 1950–January 1955) ☐ World War II (September 1940–July 1947) ☐ World War I (April 1917–November 1918) ☐ Any other time		23. At what location did this person work last week? If this person worked at more than one location, print address for the worked most last week. If not location cannot be specified, see instruction guide.	
13a. Does this person speak a language other than English at home? ☐ Yes ☐ No, only speaks English — Skip to 14		21. If this person has ever been married — a. How many times has this person been married? ☐ Once ☐ More than once		Address (Number and street)	
b. What is this language? (For example — Chinese, Italian, Spanish, etc.)		b. Month and year of first marriage? (Month) (Year) (Month) (Year)		If street address is not known, enter the building name, shopping center, or other physical location description.	
a. How well does this person speak English? ☐ Very well ☐ Well ☐ Not well ☐ Not at all		c. If married more than once — Did the first marriage end because of the death of the husband (or wife)? ☐ Yes ☐ No		b. Name of city, town, village, borough, etc.	
14. When is this person's ancestry? If ancestry about same in parent country, see instruction guide. (For example — Afro-Amer., English, French, German, Honduran, Hungarian, Irish, Italian, Jamaican, Korean, Lebanese, Mexican, Nigerian, Polish, Ukrainian, Venezuelan, etc.)		24. How long did it usually take this person to get from home to work (one way)? Minutes		c. Is the place of work inside the incorporated (legal) limits of that city, town, village, borough, etc? ☐ Yes ☐ No, in unincorporated area	
15a. Did this person live in this house five years ago (April 1, 1970)? If at college or Armed Forces in April 1975, report place of residence then. ☐ Born April 1975 or later — Turn to next page for next person ☐ Yes, this house — Skip to 16 ☐ No different house		25. How did this person usually get to work last week? If this person used more than one method, give the one usually used for most of the distance. ☐ Car ☐ Taxicab ☐ Truck ☐ Motorcycle ☐ Van ☐ Bicycle ☐ Bus or streetcar ☐ Walked only ☐ Railroad ☐ Worked at home ☐ Subway or elevated ☐ Other — Specify		d. County	
b. Where did this person live five years ago (April 1, 1970)? (1) State, foreign country, Puerto Rico, Guam, etc.: (2) County: (3) City, town, village, etc.: (4) Inside the incorporated (legal) limits of that city, town, village, etc? ☐ Yes ☐ No, in unincorporated area		FOR CENSUS USE ONLY 11. similar to a 1970 question, but the wording has been changed from "Where was this person born?" 12. similar to 1970, but the word "alien" has been changed to "not a citizen." 13. replaces one that asked about language other than English spoken in the home when the respondent was a child. 14. replaces two questions in 1970 on where the respondent's parents were born. The new approach is more subjective than the previous approach to ancestry.		e. State ZIP Code	

c. When going to work last week, did this person usually —
☐ Drive alone — Skip to 28 ☐ Drive others only
☐ Share driving ☐ Ride as passenger only

d. How many people, including this person, usually rode to work in the car, truck, or van last week?
☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 or more

After answering 24d, skip to 28.

25. Was this person temporarily absent or on layoff from a job or business last week?
☐ Yes, on layoff
☐ Yes, on vacation, temporary illness, labor dispute, etc.
☐ No

26a. Has this person been looking for work during the last 4 weeks?
☐ Yes ☒ No — Skip to 27

b. Could this person have taken a job last week?
☐ No, already has a job
☐ No, temporarily ill
☐ No, other reasons (in school, etc.)
☒ Yes, could have taken a job

27. When did this person last work, even for a few days?
☐ 1980 ☐ 1978 ☐ 1970 to 1974
☐ 1979 ☐ 1975 to 1977 ☐ 1969 or earlier
☐ Never worked } Skip to 31d

28—30. Current or most recent job activity
 Describe clearly this person's chief job activity or business last week. If this person had more than one job, describe the one at which this person worked the most hours.
 If this person had no job or business last week, give information for last job or business since 1975.

28. Industry
 a. For whom did this person work? If now on active duty in the Armed Forces, print "AF" and skip to question 31.
 (Name of company, business, organization, or other employer)
 b. What kind of business or industry was this?
 Describe the activity at location where employed.
 (For example: Hospital, newspaper publishing, mail order house, auto engine manufacturing, breakfast cereal manufacturing)
 c. Is this mainly — (Fill one circle)
☐ Manufacturing ☐ Retail trade
☐ Wholesale trade ☐ Other — (agriculture, construction, service, government, etc.)

29. Occupation
 a. What kind of work was this person doing?
 (For example: Registered nurse, personnel manager, supervisor of order department, gasoline engine assembler, grinder operator)
 b. What were this person's most important activities or duties?
 (For example: Patient care, directing hiring policies, supervising order clerks, assembling engines, operating grinding mill)

30. Was this person — (Fill one circle)
☐ Employee of private company, business, or individual, for wages, salary, or commissions
☐ Federal government employee
☐ State government employee
☐ Local government employee (city, county, etc.)
☒ Self-employed in own business, professional practice, or farm —
☐ Own business not incorporated
☐ Own business incorporated
☐ Working without pay in family business or farm

31a. Last year (1979), did this person work, even for a few days, at a paid job or in a business or farm?
☐ Yes ☒ No — Skip to 31d

b. How many weeks did this person work in 1979?
 Count paid vacation, paid sick leave, and military service.
 Weeks

c. During the weeks worked in 1979, how many hours did this person usually work each week?
 Hours

d. Of the weeks not worked in 1979 (if any), how many weeks was this person looking for work or on layoff from a job?
 Weeks

32. Income in 1979 —
 Fill circles and print dollar amounts.
 If net income was a loss, write "Loss" above the dollar amount.
 If exact amount is not known, give best estimate. For income received jointly by household members, see instruction guide.

During 1979 did this person receive any income from the following sources?
 If "Yes" to any of the sources below — How much did this person receive for the entire year?

a. Wage, salary, commissions, bonuses, or tips from all jobs... Report amount before deductions for taxes, bonds, dues, or other items.
☐ Yes ☐ No \$ 00
 (Annual Amount — Dollars)

b. Own nonfarm business, partnership, or professional practice... Report net income after business expenses.
☐ Yes ☐ No \$ 00
 (Annual Amount — Dollars)

c. Own farm... Report net income after operating expenses. Include earnings as a tenant farmer or sharecropper.
☐ Yes ☐ No \$ 00
 (Annual Amount — Dollars)

d. Interest, dividends, royalties, or net rental income... Report even small amounts credited to an account.
☐ Yes ☐ No \$ 00
 (Annual Amount — Dollars)

e. Social Security or Railroad Retirement...
☐ Yes ☐ No \$ 00
 (Annual Amount — Dollars)

f. Supplemental Security (SSI), Aid to Families with Dependent Children (AFDC), or other public assistance or public welfare payments...
☐ Yes ☐ No \$ 00
 (Annual Amount — Dollars)

g. Unemployment compensation, veterans' payments, pensions, annuity or child support, or any other source of income received regularly...
 Exclude lump-sum payments such as money from inheritance or the sale of a home.
☐ Yes ☐ No \$ 00
 (Annual Amount — Dollars)

33. What was this person's total income in 1979?
 Add entries in questions 32a through g; subtract any losses.
 If total amount was a loss, write "Loss" above amount.
 \$ 00
 (Annual Amount — Dollars)
 OR ☐ None

15. same as in 1970.
 16. same as in 1970.
 17. same as in 1970.
 18. same as in 1970.
 19. resembles a question asked in 1970, but then it was asked only of persons less than 65 years old and was concerned only with a work disability. The 1980 question tested poorly, but so many public agencies need disability data that the question will appear anyway.
 20. same as in 1970.
 21. same as in 1970.
 22. asked in 1970, but in 1980 respondents are also asked to write in the number of hours worked.
 23. same as in 1970.
 24a. a new question which attempts to measure average time spent getting to work.
 24b. same as in 1970 but with the additional categories of truck, van, motorcycle, or bicycle.
 24c & d. a new series of questions to measure the extent of carpooling.
 25. same as in 1970.
 26. same as in 1970.
 27. same as in 1970.
 28. resembles a question asked in 1970, but the words "...this person" have been substituted for the pronoun "he" in the questions on occupation, industry, and income.
 29. same as in 1970.
 30. same as in 1970.
 31a & b. same as in 1970.
 31c & d. new questions to measure part-time workers and the extent of unemployment in the previous year.
 32. similar to 1970 except that the question has been recast as "income" instead of "earnings" and "interest, dividends ..." and "unemployment compensation ..." have been separated.
 33. appeared in 1970 in slightly different form as part of the earnings question. This is the last question. The questions about population characteristics are repeated for up to seven persons in the household. If there are more than seven persons in a household an enumerator calls and tabulates responses of the additional persons.

Appendix B

KEY CONTACTS 1980 CENSUS

<i>Subject</i>	<i>Contact</i>
Community Services Program	Ted Martinez Community Services Program Bureau of the Census P.O. Box 12615 Albuquerque, New Mexico 87195 505/766-6545
Experimental Student Internship Program	Lee Brown (Anna Hutzell) Bureau of Business and Economic Research University of New Mexico Albuquerque, New Mexico 87131 505/277-2216
Jobs (Temporary)	Ted Martinez or Randy Romero Community Services Program Bureau of the Census P.O. Box 12615 Albuquerque, New Mexico 87195 505/766-6545
Local Review Program	Earle J. Gerson, Chief Decennial Census Division Bureau of the Census Washington, D.C. 20233
Maps	Jacob Silver, Chief Geography Division Bureau of the Census Washington, D.C. 20233
Neighborhood Statistics Program	Vincent P. Barabba, Director Bureau of the Census Washington, D.C. 20233
Publications	Subscriber Services Bureau of the Census Washington, D.C. 20233
<i>Data User News</i> (Monthly)	
<i>1980 Census Updates</i> (Quarterly supplement)	

CENSUS RELATED PROGRAMS

Subject

Census Statistical Areas Committee

Federal State Cooperative Program for
Local Population Estimates

Federal State Cooperative Program for
Population Projections

GBF/DIME

Contact

Albuquerque: Larry Frishman, Planning Director
Municipal Development Dept.
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87013
505/766-7422

Las Cruces: Sandra Peticolas
Planning Department
City of Las Cruces
200 N. Church
Las Cruces, New Mexico
505/526-0320

Lynn Wombold
Bureau of Business & Economic
Research
University of New Mexico
Albuquerque, New Mexico 87131
505/277-2217

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Albuquerque, New Mexico 87131
505/277-2217

Carol Foster
Middle Rio Grande Council of
Governments
505 Marquette NW
Albuquerque, New Mexico 87102
505/243-2819

TELEPHONE CONTACTS FOR DATA USERS



BUREAU OF THE CENSUS

August 1979, No. 16

Director	Vincent P. Barabba	301/763-5190
Deputy Director	Daniel B. Levine	-5192
Associate Director for Demographic Fields	George E. Hall	-5167
Associate Director for Economic Fields	Shirley Kallek	-5274
Associate Director for Statistical Standards and Methodology	Leon Gilford, Acting	-2562
Associate Director for Administration	James D. Lincoln	-7980
Associate Director for Field Operations	Curtis T. Hill	-7247
Associate Director for Information Technology	W. Bruce Ramsay	-5180
Assistant Director for Computer Services	Howard Hamilton	-2360
Assistant Director for Demographic Censuses	Earle J. Gerson	-7670
Assistant Director for Economic and Agriculture Censuses	Richard B. Quanrud	-7356

DEMOGRAPHIC FIELDS

Center for Demographic Studies	CDS	James Wetzel, Chief	-5613
Decennial Census Division	DCD	Earle J. Gerson, Chief	-7670
Demographic Surveys Division	DSD	Marvin Thompson, Chief	-2777
Foreign Demographic Analysis Division	FDA	John Aird, Chief	202/376-7692
Housing Division	HOUS	Arthur F. Young, Chief	301/763-2863
International Statistical Programs Center	ISPC	Robert O. Bartram, Chief	-2832
Mid-Decade Census Staff	MDCS	Marie G. Argana, Chief	-7676
Population Division	POP	Meyer Zitter, Chief	-7646
Statistical Methods Division	SMD	Charles D. Jones, Chief	-2672

Population and Housing Subjects

Age and Sex: United States	POP	Jennifer Peck	-5184
States (age only)	"	Edward Hanlon	-5072
Aliens	"	Elmore Seraile	-7571
Annexation Population Counts	"	Joel Miller	-7955
Apportionment	"	Robert Speaker	-7955
Armed Forces	"	Jennifer Peck	-5184
Births and Birth Expectations; Fertility Statistics	"	Maurice Moore	-5303
Census Tract Population	"	Robert Speaker	-7955
Citizenship: Foreign Born Persons, Country of Birth;	"		
Foreign Stock Persons	"	Elmore Seraile	-7571
Commuting (Journey to Work): Means of Transportation;	"		
Place of Work	"	Philip Fulton	-5226
Consumer Expenditure Survey	DSD	Gail Hoff	-2380
Consumer Purchases and Ownership of Durables	POP	Jack McNeil	-5032
Crime Surveys: Victimization, General Information	DSD	Robert N. Tinari	-1735
Data Analysis and Publication	CDS	Adolfo Paez	-1765
Current Population Survey	DSD	Gregory Russell	-2773
Decennial Census: General Plans	DCD	Morris Gorinson	-2748
Content and Tabulations	"	Marshall Turner	-7325
Minority Statistics Program	"	Clifton Jordan	-5169
National Services Program--Services	"		
for Minority Organizations	"	Vivien Lipscombe	-2042
1980 Census Update (Newsletter)	"	Carolee Bush	-2740
Disabled	POP	Jack McNeil	-5032
Education; School Enrollment	"	Larry Suter	-5050
Employment; Unemployment; Labor Force	"	Thomas S. Scopp	-2825
Farm Population	"	Diana DeAre	-7955
Health Surveys	DSD	Robert Mangold	-5508
Households and Families: Size; Number; Marital Status	POP	Arthur Norton	-7950
Quarterly Household Survey	DSD	John C. Cannon	-2802

Population and Housing Subjects—con.

Housing: Housing Information, Decennial Census	HOUS	Bill Downs	301/763-2873
Annual Housing Survey	"	Edward Montfort	-2881
Components of Inventory Change Survey	"	Elmo Beach	-1096
Contract Block Program	"	Richard Knapp	-2873
Housing Vacancy Data	"	Margaret Harper	-5840
Residential Finance	"	Betty Kent	-2866
Income Statistics: Decennial Census	POP	George Patterson	-5060
Current Surveys; Revenue Sharing	"	Dan Burkhead	-5060
Incorporated/Unincorporated Places	POP	Robert Speaker	-7955
Industry and Occupation Statistics (See also Economic Fields)	"	John Priebe	-5144
Institutional Population	"	Arthur Norton	-7950
International Population	"	Samuel Baum	-2870
Language, Current; Mother Tongue	"	Edith McArthur	-5050
Longitudinal Surveys	DSD	George Gray	-2764
Migration; Mobility	POP	Kristin Hansen	-5255
Mortality and/or Death	"	Martin O'Connell	-5303
Outlying Areas (Puerto Rico, etc.)	"	Jennifer Peck	-5184
Population Count Complaints	"	Joel Miller	-7955
Population: General Information; Census Data; Characteristics; Survey Data	"	Johanna Barten	-5002 or -5020
Population Estimates: Local Areas; Revenue Sharing	"	Mary Kay Healy	-7964
Congressional Districts; SMSA's	"	Donald Starsinic	-5072
Individual States	"	Edward Hanlon	-5072
United States (National)	"	Jennifer Peck	-5184
Estimates Research	"	Richard Irwin	-7883
Counties; Federal-State Cooperative Program for Local Population Estimates	"	Fred Cavanaugh	-7722
Population Projections: National	"	Gregory Spencer	-5300
State	"	Signe Wetrogan	-5300
Household Projections	"	Robert Grymes	-7950
Poverty Statistics; Low Income Areas	"	Arno Winard	-5790
Prisoner Surveys: National Prisoner Statistics	DSD	Chester A. Bowie	-1832
Data Analysis and Publication	CDS	John Wallerstedt	-1778
Race and Ethnic Statistics:	POP	Nampee McKenney	-7890
Race	"	Patricia Berman	-2607
American Indian Population	"	Karen Crook/Edna Paisano	-5910/-7572
Asian Americans	"	Patricia Johnson	-7572
Black Population	"	Dwight Johnson	-7572
Ethnic Populations	"	Elmore Seraile	-7571
Spanish Population	"	Edward Fernandez	-5219
Religion	"	Elmore Seraile	-7571
Revenue Sharing (See also Economic Fields--Governments; Income Statistics)	"	Joseph Knott	-5158
Sampling Methods	SMD	Charles Jones	-2672
Social Indicators	CDS	Denis Johnston	-5145
Social Stratification	POP	Larry Suter	-5050
Special Censuses	DCD	George Hurn	-5806
Special Surveys	DSD	Linda R. Murphy	-5507
SMSA's: Area Definition and Total Population	POP	Robert Speaker	-7955
SMSA's: New Criteria	"	Richard Forstall	-5591
Travel Surveys	DSD	Staff	-1798
Urban/Rural Residence	POP	Diana DeAre	-7955
Veteran Status	"	Mark Littman	-7962
Voting and Registration	"	Jerry Jennings	-7946
Voting Rights	"	Gilbert Felton	-5313

ECONOMIC FIELDS

Agriculture Division	AGR	Orvin L. Wilhite, Chief	-5230
Business Division	BUS	Tyler R. Sturdevant, Chief	-7564
Construction Statistics Division	CSD	Leonora M. Gross, Chief	-7163
Economic Census Staff	ECS	Richard B. Quanrud, Chief	-7356
Economic Surveys Division	ESD	Roger H. Jueghagen, Chief	-7735
Foreign Trade Division	FTD	Emanuel A. Lipscomb, Chief	-5342
Governments Division	GOVS	Sherman Landau, Chief	-7366
Industry Division	IND	Milton Eisen, Chief	-5850

Economic Subjects

Agriculture: General Information	AGR	Arnold Bollenbacher	301/763-5170
Crop Statistics	"	Donald Jahnke	-1939
Farm Economics	"	John Blackledge	-5819
Livestock Statistics	"	Thomas Monroe	-1974
Special Surveys	"	Kenneth Norell	-5914
Construction Statistics:			
Census/Industries Surveys	CSD	Alan Blum	-5435
Special Trades; Contractors; General Contractor-Builder	"	Andrew Visnansky	-7547
Current Programs	"	David Siskind	-7165
Construction Authorized by Building Permits (C40 Series) and Residential Demolitions (C45 Series)	CSD	John Pettis	-7244
Expenditures on Residential Additions, Alterations, Maintenance and Repairs, and Replacements (C50 Series)	"	Elinor Champion	-5717
Housing Starts (C20 Series); Housing Completions (C22 Series); and New Residential Construction in Selected SMSA's (C21 Series)	"	William Mittendorf	-5731
Price Indexes for New One-Family Homes Sold (C27 Series)	"	Steve Berman	-7842
Sales of New One-Family Homes (C25 Series)	"	Juliana Van Berkum	-7314
Value of New Construction Put in Place (C30 Series)	"	Allan Meyer	-5717
County Business Patterns	ESD	James Aanestad	-7642
Employment/Unemployment Statistics	POP	Thomas Palumbo	-2825
Energy Related Statistics	DIRS	Elmer S. Biles	-7184
Enterprise Statistics	ESD	John Dodds	-7086
Environmental Surveys	IND	Wayne McCaughey	-5616
Exports, Origin of	"	Arthur Horowitz	-7666
Foreign Trade Information	FTD	Juanita Noone	-5140
Governments: Criminal Justice Statistics	GOVS	Diana Cull	-2842
Eastern States Government Sector	"	Howard Sales	-7783
Western States Government Sector	"	Ulvey Harris	-5344
Employment	"	Alan Stevens	-5086
Finance	"	Vancil Kane	-5847
Governmental Organization and Special Projects	"	Muriel Miller	-5308
Revenue Sharing (See also Demographic Fields)	"	John Coleman	-5272
Taxation	"	Earle Knapp	-5302
Income Statistics: Decennial Census	POP	George Patterson	-5060
Current Surveys; Revenue Sharing	"	Dan Burkhead	-5060
Industry and Commodities Classification	ESD	Walter Neece	-5449
Manufactures: Census/Annual Survey of Manufactures	IND	Arthur Horowitz	-7666
Subject Reports (Concentration, Production Index, Water, etc.)	"	Arthur Horowitz	-7666
Durables	"	Dale Gordon	-7304
Nondurables	"	Michael Zampogna	-2510
Current Programs	"	John Wikoff	-7800
Shipments, Inventories, and Orders	"	Ruth Runyan	-2502
Durables	"	Paul Berard	-2518
Nondurables	"	Robert Nealon	-5911
Fuels/Electric Energy Consumed by Manufactures	"	John McNamee	-5938
Mineral Industries	"	John McNamee	-5938
Minority Businesses	ESD	Jerry McDonald	-5182
Puerto Rico: Censuses of Retail Trade, Wholesale Trade, and Selected Service Industries	BUS	Alvin Barten	-5282
Retail Trade: Census	"	Bobby Russell	-7038
Monthly Retail Trade Report: Accounts Receivable; and Monthly Department Store Sales	"	Conrad Alexander	-7128
Annual Retail Trade Report; Advance Monthly Retail Sales; Monthly Retail Inventories Survey	"	Irving True	-7660
Selected Service Industries: Census	"	Dorothy Reynolds	-7039
Current Services Reports	"	Edward Gutbrod	-7077
Transportation: Commodity Transportation Survey; Truck Inventory and Use; Domestic Movement of Foreign Trade Data	ESD	Robert Torene	-5430
Travel Surveys	DSD	Betty Buckner	-1798
Wholesale Trade: Census	BUS	Faran Stoetzel	-5281
Current Wholesale Sales and Inventories; Green Coffee Survey; Canned Food Survey	"	Ronald Piencykoski	-5294

GEOGRAPHY AND USER SERVICES

Administrative Services Division	ASD	Henry J. Husmann, Chief	301/763-5400
Data User Services Division	DUSD	Michael G. Garland, Chief	-7720
Field Division	FLD	Richard C. Burt, Acting Chief	-5000
Geography Division	GEO	Jacob Silver, Chief	-5636
Public Information Office	PIO	Henry H. Smith, Chief	568-1200
Statistical Research Division	SRD	James L. O'Brien, Acting Chief	763-5350
Age Search	DUSD	Christine Stewart	-7337
Boundaries and Annexations	GEO	Frances Barnett	-5437
Bureau of the Census Catalog	DUSD	Ann King	-5574
Census Geography 1970/1980	GEO	Donald Hirschfeld	-2668
Census Procedures, History of	DUSD	Frederick Bohme	-7337
Census Use Research	"	Donald S. Luria	-7490
College Curriculum Support Project	"	Les Solomon	-5483
Computer Graphics and Computer Mapping	GEO	Frederick Broome	-7442
Computer Tapes; Computer Programs	DUSD	Larry Carbaugh	-2400
Congressional District Atlas	GEO	Robert Hamill	-5437
Data User News (Monthly Newsletter)	DUSD	Nancy Smith	-2400
Data User Training: Seminars, Workshops, Conferences	"	Deborah Barrett	-5483
Earth Resources Satellite Technology:			
United States	GEO	James Davis	-5808
International	"	Robert Durland	-5720
Exhibits	DUSD	Douglas Moyer	-5512
GBF/DIME System	GEO	Robert La Macchia	-7315
Geographic Area Measurement and Centers of Population	"	Henry Tom	-7856
Geographic Statistical Areas	"	Alice Winterfeld	-7291
GE-50 Series Maps; Urban Atlas	"	Dan Jones	-7818
Guides and Indexes	DUSD	Gary Young	-2400
Land Area	POP	Joel Miller	-7955
Library	ASD	Betty Baxtresser	-5040
Publications on Microfiche	"	Dorothy Dunham	-5511
Reference Service	"	Richard Cooper	-5042
Map Orders	DUSD	Deloris Fentress	-2400
Microfilm	"	Paul Manka	-2400
Public Information Office	PIO	Staff	568-1200
Public Use Samples (Microdata)	DUSD	Paul Zeisset	-7368
Revenue Sharing Geography	GEO	Frances Barnett	-5437
Special Tabulations	DUSD	Larry Carbaugh	-2400
State Data Center Program	"	Michael G. Garland	-7720
Statistical Compendia	"	William Lerner	-7024
Subscriber Services (Publications)	ASD	Daisy Williams	-7472
Summary Tape Processing Centers	DUSD	Martha Wyeth	-2400
Survey Methodology Information System	SRD	Patricia Fuellhart	-7600

User Assistance in Regional Offices

Census Bureau Regional Offices	Regional Director	Telephone Number	Data User Services Officer	Telephone Number
Atlanta, GA	Forrest P. Cawley	404/881-2271	Wayne Wall	404/881-2274
Boston, MA	Arthur G. Dukakis	617/223-2327	Judith Cohen	617/223-0668
Charlotte, NC	Joseph R. Norwood	704/371-6142	Lawrence McNutt	704/371-6144
Chicago, IL	Stanley D. Moore	312/353-6251	Stephen Laue	312/353-0980
Dallas, TX	Percy R. Millard	214/767-0638	Valerie McFarland	214/749-2394
Denver, CO	Richard C. Burt	303/234-3924	Jerry O'Donnell	303/234-5825
Detroit, MI	Robert G. McWilliam	313/226-7742	Timothy Jones	313/226-4675
Kansas City, KS	Rex L. Pullin	816/374-4601	Kenneth Wright	816/374-4601
Los Angeles, CA	C. Michael Long	213/824-7317	E. J. (Bud) Steinfeld	213/824-7291
New York, NY	John C. Cullinane	212/264-3860	Jeffrey Hall	212/264-4730
Philadelphia, PA	Porter S. Rickley	215/597-4920	David Lewis	215/597-8314
Seattle, WA	John E. Tharaldson	206/442-7800	Larry Hartke	206/442-7080

Listing of Telephone Contacts for Data Users compiled by Dorothy M. Chin, User Training Branch,
Data User Services Division, Bureau of the Census. Write for additional copies, or call 301/763-5293.

Subject Matter Not Listed: For information, call 301/763-2400

Footnotes

1. Subject to change.
2. National Academy of Sciences, *Counting the People in 1980: An Appraisal of Census Plans* (Washington, D.C.: National Academy of Sciences, 1978), p. 136.
3. *Ibid.*, p. 137.
4. The "synthetic method," for example uses data on undercount by race, but not by ethnic group. This would mean that states with a large black population would receive a larger share of federal funds at the expense of states with few blacks but a high percentage of Spanish origin people. National Academy of Sciences, *op. cit.*, p. 16.
5. "A Right to be Counted," *American Demographics*, Vol. 1, No. 7 (July/August, 1979), p. 46.
6. ED plans for Bernalillo, Sandoval and Dona Ana Counties were developed by local Census Statistical Areas Committees; ED plans for the Indian reservations were developed by each tribe working directly with the Bureau of the Census.
7. The term "unincorporated place" is not applicable in all parts of the nation; therefore, the term "census designated place" has been substituted for the 1980 Census.
8. Potential census designated places were reviewed by the Census Statistical Areas Committees in the Albuquerque SMSA and Dona Ana County.
9. Joseph W. Duncan, "Metropolitan Areas for the 1980s," *American Demographics*, Vol. 1, No. 7 (July/August, 1979), p. 27.
10. *Ibid.*, p. 33.
11. "Vistas," *New Mexico Business Journal*, Vol. 3, No. 9 (October, 1979), p. 13.
12. The population cut-off had originally been 5,000, but was lowered to 2,500 because of budgetary constraints.
13. Spanish origin will be asked of *all* persons rather than the confusing sample basis used in the 1970 Census. In New Mexico and four other states, the term "Spanish language or surname" was used to identify the Spanish population in 1970. Thus, 1980 data on the Spanish population in New Mexico will not be comparable to data from 1970. The problem of double counting American Indians with Spanish surnames as both Indian and Spanish will be avoided, however.
14. Martha Farnsworth Riche, "Census Data User Services," *American Demographics*, Vol. 1, No. 4 (April, 1979), p. 39.
15. The Census Bureau estimates that the 1970 Census cost approximately \$1.00 per person. The \$3.00 increase in 1980 is accounted for by: \$1.00 for inflation, \$.75 for attempts to improve coverage, \$.50 for new data and processing improvements, \$.50 for improvement in field administration, and \$.25 for the increase in the number of households.
16. David L. Kaplan, "America's National Portrait," *American Demographics*, Vol. 1, No. 4 (April, 1979), p. 11.

Census Related Programs

LYNN WOMBOLD and BETSIE KASNER

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INTRODUCTION

In addition to the activities of the 1980 Census, there are a number of joint federal-state programs designed to promulgate and extend the application of census data. The Summary Tape Processing Center Program was developed prior to the 1970 Census to disseminate the census data available only from computer tapes. Although this program has increased the availability of small area statistics, it still represents a relatively limited service to data users when the need for technical assistance in understanding the availability and applicability of census data has been substantially increased by the expanding volume and complexity of census reports.

The State Data Center Program was formulated by the Bureau of the Census to address the needs of data users—not only for improved access to census data, but also for technical assistance in data access and use. Moreover, the objectives of the State Data Center Program include integrating census data with local data series to extend and update census data products. While the utility of census data derived from a complete enumeration is undeniable, the enumeration is currently conducted only once every ten years. Postcensal indicators of change need to be correlated with the base data provided by the census to update demographic and economic indicators.

The need for current data has been partially addressed through the Federal-State Cooperative for Local Population Estimates. Through this program, the Bureau of the Census works with one agency in each State to produce total population estimates for counties and municipalities. However, the demand for population statistics is not limited to estimates. Population projections are also required, and a Federal-State Cooperative Program for Population Projections has been recently proposed to address this need.

Despite the number of programs which have been developed by the Bureau of the Census to meet the needs of data users, participation in New Mexico has been variable due to the lack of funding. Following is a more detailed description of the programs and the status of each in New Mexico.

- *Summary Tape Processing Center*
- *State Data Center*
- *Federal-State Cooperative Program for Local Population Estimates*
- *Federal-State Cooperative Program for Population Projections*

CENSUS BUREAU/ STATE COOPERATIVE PROGRAMS

Summary Tape Processing Center

Census summary tapes were first developed as part of the normal processing of data during the 1960 Census. Compared to published reports, there are advantages to using computer tapes, e.g., more information can be stored on tape, analysis can be performed more quickly because the data is already in machine-readable form, and summary tapes contain information for small geographic areas that is not available in printed form. For example, if you wanted to know the ethnic breakdown for a certain part of Roswell, New Mexico, you would have to use the summary tapes because the information is not available in a published report.

To make these data more readily available, the Census Bureau initiated the Summary Tape Processing Center Program in the late 1960s. Any agency or organization that purchases all or part of the census summary tapes from the Census Bureau and makes tape copies and print-outs available to the public can be designated a Summary Tape Processing Center (STPC). No financial support is provided by the Census Bureau to

STPC's. STPC's are usually a state agency, private company, or a department within a university. Depending on the center's resources, the kind and number of services offered vary greatly. The fees charged also vary.

The Bureau of Business and Economic Research (BBER) was designated by the Census Bureau as a STPC in 1968. The BBER's Data Bank houses the complete set of 1970 Census printed reports, summary tapes, and county and city maps for New Mexico. Selected publications and microfiche are available for other states. Other nondecennial Census Bureau reports, e.g., Census of Agriculture, Economic Censuses, Current Population Reports, are also collected. Since 1971, when 1970 Census data were first available, BBER has supplied more than 6,000 government agencies, businesses, universities, and private individuals with census data for New Mexico. (See Appendix A for use and application of census data obtained from the Data Bank.)

State Data Center

Through the Summary Tape Processing Center Program and the Federal-State Cooperative Program for Local Population Estimates, the BBER has been working with the Census Bureau to expand the use of census data in New Mexico. In this endeavor the BBER has been successful; use of census data has increased substantially since 1970. However, current procedures for distributing census data still represent a relatively limited service to data users when compared to the services provided by other states and the opportunities for increased service in New Mexico. A number of factors contribute significantly to the need for an expanded service function.

First, the need for technical assistance in understanding the availability and applicability of census data has been substantially increased by the expanding volume and complexity of census reports. While the Census Bureau has increased the data products available, many users have experienced difficulty with interpretation and application of the new economic and demographic data. If the data are to be useful, this need must be addressed.

Secondly, census data is serving increasingly as the basis for projections and forecasts which are,

in turn, the basis for many public and private decisions such as decisions to build new energy facilities, the budgeting of public funds, and expansion of businesses. Accordingly, it becomes increasingly important to establish a sound methodological base for use of the census data to serve this forecasting purpose.

Indicative of the need for this research service, a recent survey of state demographic centers in 16 southern states emphasized the "ubiquity of census data and demographic capabilities in state government," and the confusing consequences.¹ It was difficult for state agencies to coordinate their data requirements and even more difficult for data users to identify the most reliable source of demographic data.

The experience of South Carolina is illustrative of the problem:

"We discovered in our work with State agencies that there were eight persons in seven different agencies making county population estimates and projections. In most cases there was a lack of methodology, or the person performing the work did not have sufficient qualifications to know whether the methodology was good or bad."²

This fragmentation of demographic research, and the absence of reliable methodology, has been noted in New Mexico, too. Different state agencies have produced or contracted for population estimates or projections. One state agency contracted twice for population forecasts for the same geographic area and the same time period when the projections produced by the first contract were challenged by a federal agency.

Provision of additional services through the State Data Center Program can reduce the cost of information for all state agencies by averting the need for individual agencies to produce or contract for demographic information—by reducing redundancy.

A third need is the growing demand for coordination among differing data files. Most noticeable has been the connection between demographic and economic information. Migration particularly is strongly related to economic forces. As a consequence, many questions related to migratory impact require economic data to be

answered. Similar examples in many other fields such as transportation, health, environment, and housing require many different kinds of data.

In these circumstances a centralized repository for data becomes important for at least two reasons:

1. Search cost is significantly reduced for anyone seeking answers for questions which require different kinds of data whose location—without centralized storage—might be far apart and difficult to retrieve; and
2. The design of new additions to data collections can be improved by the experience gained from the coordinated operation of the separate collections.

In anticipation of the expected increase in demand for 1980 Census information and related activities, the Bureau of the Census has developed the *State Data Center Program*. One agency or consortium of two or three agencies, in each state is to be designated as a State Data Center and charged with the responsibilities outlined in a joint agreement with the Census Bureau.

The objectives of the State Data Center Program are delineated as:

1. "Expand the training and technical assistance in data access and use;
2. Improve access to Census Bureau statistics and related products;
3. Moderate costs; and
4. Facilitate improvements in products and techniques of access and use."³

To meet these objectives, the Census Bureau will provide State Data Centers with Census publications, summary tapes, computer programs, maps, and technical assistance at no cost. State Data Centers will make this data available to the public, hold workshops in the use and application of census data, provide user consultation services, work with other State Data Centers and with the Census Bureau on the development of computer programs, and provide the Census Bureau with feedback on user needs and problems. Affiliate data centers around the state, e.g., local libraries, Chambers of Commerce, will receive training in the use and application of census data and be supplied with a core collection of census publications. Questions on census data that the affiliate data

centers cannot handle would be referred to the State Data Center.

Benefits accruing to New Mexico through this program would include a reduction in the cost of obtaining information and improvements in the quality and application of census data. Coordinating data needs of State agencies would substantively reduce costs now incurred by duplication. Increasing technical assistance in accessing and applying census data would maximize the utility of census data for planning and, concomitantly, minimize the research time of planners, administrators, and other data users.

In the Spring of 1978, Governor Apodaca issued Executive Order 78-19 creating the State Data Center and naming BBER as the responsible organization within New Mexico. Since this action came after the 1978 legislative session, legislative support for the program was not sought until the 1979 session. Senate Bill 462 would have provided the initial funding required for the Center to initiate the computer programming and other preparatory activities for the 1980 Census. SB462 was passed unanimously in the Senate but was killed in the House of Representatives.

Subsequent discussions involving university and state officials led to the conclusion that inadequate support for the State Data Center program existed at the policymaking level of state government. Consequently, BBER requested in May, 1979 that Executive Order 78-19 be rescinded since there were no funds available to support the responsibility imposed by the Order. In July, 1979 Governor King rescinded the Executive Order. Although intermittent discussions involving Bureau of the Census personnel and data-users around New Mexico have been directed toward a resurrection of the program in New Mexico, no further action has been taken as of this writing.

Seventeen states—Alabama, Arizona, Arkansas, Delaware, Georgia, Louisiana, Idaho, Indiana, Louisiana, Maryland, Montana, New York, North Carolina, Ohio, Virginia, West Virginia, and Wisconsin—now have formal agreements with the Census Bureau to participate in the State Data Center Program. Joint agreements are in the final stage of negotiation with other states. In addition, the governors of fourteen states have formally expressed an interest in the program.

Federal-State Cooperative Program for Local Population Estimates

The Federal-State Cooperative Program for Local Population Estimates (FSCP) was formed in 1968—although discussions about the viability of a cooperative project predated the inception of the program by almost fifteen years. Historically, areas of cooperation between the Bureau of the Census and state technicians included an informal local review program and the Bureau's role as a "clearinghouse" on the availability of locally-prepared estimates.

Survey of state and local agencies which prepare population estimates has been a function of the Bureau for some years. This survey provided the initial impetus for the development of the FSCP by demonstrating the enormous variability in local estimates. The differential quality of the estimates—and the estimate methodologies—precluded comparisons of population estimates and, therefore, analysis of changes in population distribution and composition.

Problems engendered by the lack of comparability in local estimates, the variable quality of the estimates, and the sheer quantity of conflicting population estimates were finally addressed in the First National Conference on Comparative Statistics (sponsored by the National Governors' Conference and the Council of State Governments). This conference publicized the need for comparative statistics—for standardization.

In response, the FSCP was formed to provide comparable population estimates for small areas. Two primary tasks were defined for the FSCP. The immediate objective was to set up a comprehensive test and evaluation program to establish the relative accuracy of various data series and methods. Testing the techniques available for estimation would provide the basis for standardizing population estimates.

The original objective of the program focused upon the production of an annual series of county population estimates by one "official" agency in each state (to be designated by the Governor of the State). State responsibilities included the development of estimates by mutually agreed upon techniques and the collection of input data. The responsibilities of the Census Bureau included establishing standardized techniques, insuring the

quality of the estimates, recommending the estimates for use in any federal or state program which required such estimates, and publishing the annual estimate series.

Many of these objectives have been achieved through the development of the FSCP. The test of methods against the 1970 Census was the largest test of estimating techniques ever conducted for counties in the United States.⁴ Application of "preferred" methods has produced a consistent series of county population estimates which represent a significant improvement in both quality and comparability.⁵ Moreover, the participation of 48 states (Texas and Massachusetts excepted) in the FSCP has reduced the number of conflicting estimates.

However, the development of the FSCP has differed somewhat from the original objectives. Impacted by the proliferating demand for population statistics, the scope of the FSCP has been expanded while the participation of many states has been encumbered by differential state resources.

Planning needs and government programs have significantly increased the demand for population statistics. Currently, more than 100 federal programs rely upon population figures—at least partially—to allocate funds. One of the most publicized new programs—the State and Local Fiscal Assistance Act of 1972 or General Revenue sharing—requires use of population estimates not only for counties, but also for municipalities, in its fund allocation formulas.

To accommodate this program, the Census Bureau developed a new method which incorporates data for municipalities. Since the new method (the Administrative Records Method) applies a confidential data series—federal income tax returns—to estimate migration, cooperation with state (FSCP) agencies in the production of the estimates has been limited. However, state agencies have been asked to assist with the collection and review of local vital statistics, the initial review of the estimates, and the Census Bureau's local review program.

The revenue sharing estimates and the county estimate series have supplemented the need for postcensal population statistics, but many of the demands for population information remain to be addressed. The needs expressed by data users

have included estimates for smaller geographic units, such as census tracts; estimates of population characteristics, such as age, sex, race and ethnicity; and population projections.

In response to these needs, members of the FSCP have formed three technical subgroups to explore techniques for producing additional population estimates/projections:

- Subcounty Estimates Task Force,
- County Characteristics Task Force, and
- Projections Task Force

Since the methodological bases for these areas have not been well developed, the groups have a research orientation. Given the methodological limitations and the voluntary basis of participation, production of standardized figures is not anticipated in the immediate future.

In spite of the pressure to augment postcensal population data, the FSCP has evolved on the basis of minimum, or passive, state participation. Many states do not have the resources to participate fully in the program, and no federal funds have ever been appropriated to support the FSCP. A

comparison of the levels of participation in FSCP activities is outlined in Table 1.

To summarize the table: the passive level of participation represents reliance upon the Census Bureau's resources for the production of annual estimates. Participation is limited to supplying the input data for the Census Bureau's computer programs and performing a perfunctory review of the input data and the estimates. Maximum, or active, participation includes each of these activities and developing the capability to produce estimates independently—in accordance with standardized techniques.

In New Mexico, the level of participation has increased somewhat beyond the minimum responsibilities as the BBER has tried to incorporate some of the additional FSCP activities. However, participation in the production of county estimates remains nominal. County input data are first compiled and reviewed by the BBER. Any anomalies in the input data—such as a sudden decrease in school enrollment—are reviewed with local sources to ascertain if the change represents the

TABLE 1
LEVELS OF PARTICIPATION

<i>FSCP Activities</i>	<i>Passive</i>	<i>Active</i>	<i>New Mexico</i>
State estimates	Minimal review of input data	Detailed review of input data	Minimal review of input data
County estimates	Compiling county input data	Compiling input data	Compiling county input data
	Minimal review of input data	Detailed review of input data	Minimal review of input data
	Minimal review of estimates	Producing county population estimates	Minimal review of estimates
		Detailed review of county estimates	
		Research & development of estimate techniques	
Subcounty estimates	Providing data on vital statistics and special populations	Providing data on vital statistics and special populations	Providing data on vital statistics and special populations
		Detailed review of subcounty estimates	Minimal review of subcounty estimates
		Participating in Census Bureau's local review program	Participating in Census Bureau's local review program
		Preparing an alternative series of subcounty estimates to be used with those of the Census Bureau	
Task Forces	No participation	Active participation in one or more of the Task Forces	Minimal participation in Projections Task Force

development of a new trend or an aberration. If there is a plausible explanation for an unexpected shift in the data series, the input data may be adjusted.

For example, school enrollment in one county had increased steadily from the 1970-71 school year through the 1975-76 school year. In 1977, enrollment suddenly decreased by more than 400 students. When this drop was reviewed with the local school district, it was learned that a bumper crop of pinon nuts had kept many children out of school for harvesting. The school enrollment data series was subsequently adjusted to offset the impact of this aberration upon the population estimates.

Once the county input data have been compiled and reviewed they are forwarded to the Census Bureau. All the estimates are produced by the Census Bureau's computer programs. The final estimates of county population are reviewed briefly by the BBER and released. Time and budget constraints preclude a more active role in the production of county population estimates.

Production of the revenue-sharing estimates necessarily involves less participation by all states. Since the method for generating population estimates for subcounty places incorporates a confidential data series, cooperation between the Census Bureau and the states is necessarily limited. Like other states, New Mexico supplies the vital statistics for subcounty areas, but participation has been extended to the local review program.

BBER acts as a "first line" contact for municipalities in the review of the final estimates. This role includes answering any questions about the estimates and advising local officials about challenge procedures. The most common basis for a challenge is an alternative estimate produced via the Housing Unit method. Local officials can be advised about the data requirements and the application of this method. The data can be submitted to the BBER or the Census Bureau for review, although the final decision to accept or reject a challenge is made by the Census Bureau. BBER has accepted this additional responsibility to provide a local contact for officials in New Mexico.

Extending the responsibilities of the FSCP further, the BBER has also elected to participate in the Projections Task Force. Although the travel budget

has limited attendance at meetings, participation has been active to emphasize the importance of population projections locally.

Future activity in the FSCP will be focused upon the 1980 Census. FSCP agencies have been asked to participate informally in the 1980 Census Local Review Program to aid local governments, as needed, with their review of the preliminary counts. In addition to the Local Review Program, the Census Bureau has planned another comprehensive test of data series and estimating techniques.

Some of the basic issues to be addressed include: the accuracy of the estimate at each geographic level and the factors which may differentiate accuracy from place to place—e.g., the size of a place and/or the geographic location of the place. The test of methods will also address some basic methodological questions, such as the impact of past trends or the effect of controlling county estimates to a state estimate. Special emphasis will be placed on those areas which have not tested well in the past.

To accommodate these activities, the regular production schedule for population estimates will be suspended. Although the revised 1978 and provisional 1979 county estimates will be produced, there are no plans to publish these estimates. Similarly, the 1978 revenue-sharing estimates will be provided to the Office of Revenue Sharing (ORS), but they will not be distributed by the Census Bureau for local review. Any appeals will be handled through ORS.

These estimates will be consistent with the past series. Since the publication of the estimates would probably coincide with the release of the 1980 Census counts, the publication of the estimates will be suspended to avoid confusion. The estimates will be utilized in the 1980 Census Test of Methods.

Federal-State Cooperative Program for Population Projections

What began as a task force to explore techniques for producing population projections utilizing comparable methods and assumptions has evolved as a separate Federal-State Cooperative Program. Again, the problems created by the pro-

lification of population projections provided the initial impetus to this development. Legislative pressures publicized the problem, while federal policy-makers attempted a resolution.

State population projections have been produced by various sources including the Bureau of the Census, the Bureau of Economic Analysis, numerous state agencies and private groups for many years. Although the sheer volume of conflicting population projections has created confusion for planners and data users for years, resolution of this dilemma was not addressed until recent federal legislation—most notably, the Clean Water Amendments Act—required the use of population projections to determine federal fund allocations.

Given the responsibility for administering the Clean Water Amendments Act, the Environmental Protection Agency surveyed states to collect the state and local population projections currently in use. The survey demonstrated the magnitude of the problem. Summing the projections for each place yielded a national total which exceeded the highest projection for the United States in 1990 by *tens of millions*.

While the Environmental Protection Agency produced an immediate, albeit unsatisfactory, solution to their problem, the question of standardizing state population projections was raised by several other federal agencies. The Statistical Policy Coordinating Committee (SPCC)—a cabinet committee charged with advising the President on statistical issues—was asked to study the issue of state population projections.

After several months of study, the SPCC issued a number of recommendations which provided for the development of a standardized series of baseline state population projections for use whenever projections were included as a factor in the distribution of federal funds. The Bureau of the Census and the Bureau of Economic Analysis (BEA) were assigned the responsibility for developing a joint methodology and providing for state, regional and local input. States were given the responsibility for disaggregating the state projections to substate areas and providing for input from local entities. To assure the development of procedures and guidelines for generating substate projections, the Office of Management and Budget

(OMB) was given the responsibility of prescribing guidelines for states.

The proposed procedures for developing state and substate population projections have been drafted by the Office of Federal Statistical Policy and Standards (OFSPS) and OMB for review and comment, but the implications are clear. States must assume a two-fold responsibility in the process of generating a standardized series of population projections in order to protect their interests.

The most obvious responsibility involves the disaggregation of the baseline state population projections. OMB will request designation of one agency in each state to assume this task. However, the State's role cannot be limited to disaggregation. Participation in the development of the state population projections is essential to the interests of each state.

Unfortunately, the SPCC did not delineate the states' role in the development of the state projections—aside from recommending a provision for "state, regional and local" input by the Department of Commerce. In the meantime, the Bureau of the Census and the Bureau of Economic Analysis proceeded to develop the methodology to be used in producing state projections without soliciting input from states.

To insure state participation in the process of developing state population projections, the Projections Task Force not only informed all states about recent developments in this issue, but also sent a letter to Courtenay Slater, Chief Economist for the Department of Commerce, to propose a formal Federal-State Cooperative Program for Population Projections.

The concept of a Federal-State Cooperative Program for projections has been endorsed by the Census Bureau, the BEA, and the states, but for different reasons. The federal agencies have viewed the program vaguely as a means of establishing formal communication channels with those state agencies which are involved in the preparation of population projections. The states regard the program not only as a means of establishing a communication network—but also as an opportunity to provide state input to the production of the state population projections.

Given the development of federal policy recommendations which directly impact them, the states

are not willing to accept a passive role. However, the operational format of the program will be determined later. The goal of the new FSCP is to establish a close working relationship between state governments and the Bureau of the Census to facilitate the exchange of technical information.

The Bureau of the Census has invited the Governor of each state to designate an agency to represent the state in this FSCP. Until the Federal-State Cooperative Program for Population Projections is

established, the Projections Task Force is soliciting suggestions from states on the operational format of the program.

While the "working relationship" remains unresolved, participation for many states will be contingent upon funding, another problem yet to be resolved. The Office of Management and Budget has indicated concern about funding the states' activities but noted that they could not distribute funds directly to state agencies.

Appendix A

Examples of Recent Uses of Data Bank Information

- Used by firms in determining the proportion of state's population covered by its business
- Real estate appraisals
- Budget projections for various cities in New Mexico
- Financial studies for Indian tribes
- Reporting to federal bank examiners
- Numerous grant proposals
- Application to open new branch bank
- Age discrimination court suit
- Environmental impact statements
- Projection of tax revenues
- Marketing studies by major retail firms
- Reports to Center for Disease Control in Atlanta
- In development of utility load forecast
- Carpooling study
- Establish volunteer programs around the state
- Mortality rate studies
- Area economic studies by federal agencies
- Investment in commercial enterprises
- Planning studies for new hospitals and libraries
- Projection of District Court case loads
- Development of low income housing projects

Footnotes

1. Rosenberg, Harry M. and George C. Myers, "State Demographic Centers: Their Current Status," *The American Statistician*, Vol. 31, No. 4, (November, 1977).
2. Evans, Thomas P., "The Perspective of State Government on Demographic Activity," paper presented at the 1976 Annual Meeting of the Southern Regional Demographic Group, Atlanta, Georgia.
3. U.S. Department of Commerce, Bureau of the Census, *State Data Center Program: General Description*, (Washington, D.C.: U.S. Government Printing Office, 1977), p. 12.
4. For the report of test results for counties, see U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-26, No. 21 (Washington, D.C.: U.S. Government Printing Office, 1973).
5. All county population estimates produced under the auspices of the Federal-State Cooperative Program are published in Series P-26 of the *Current Population Reports*. County estimates for those states which are not participating in the program and all revenue-sharing estimates are published in Series P-25.

Current Economic Developments in New Mexico

MONTHLY SUMMARY

ILENE KELFER

The direction of the U.S. economy remains uncertain; economic indicators demonstrate varied behavior. Real GNP rose 3.5 percent in the third quarter of this year, and the unemployment rate fell to 5.8 percent in November. However, the effects of the Federal Reserve Board's anti-inflationary policies have not yet been felt in all sectors. The most immediate impact has been on interest rates. The cost of borrowing for both consumer and businesses has soared; the prime lending rate peaked at 15.5 percent in October and the cost of home financing exceeded 12 percent. Analysts believe that a number of savings and loan associations throughout the U.S. are not making home loans available at any cost. As a result, housing starts in the U.S. in October were down 8 percent from September to 1.76 million—the lowest figure since April of this year. In addition, corporate credit growth slowed to an annual rate of 7.1 percent during October, contrasting sharply with 32.9 percent growth in the previous month. Data for personal income showed a modest increase of 0.8 percent in October after a 0.7 percent increase in September. Consumption grew less rapidly during October, rising only 0.2 percent. Most analysts agree that greater weakening in the economy can be expected. The degree to which this occurs will depend, in part, upon the full impact of current FED policy and crude oil price increases which are expected in December.

Like the nation, the New Mexico economy softened during both September and the third quarter of this year. After dipping to a seasonally adjusted (SA) 541,800 in August, the civilian labor force expanded 1.3 percent to 549,000 (SA) in September. However, total September employment in New Mexico grew only 1.0 percent (SA),

driving up the unemployment rate to 6.0 percent (SA). The labor force increased 0.8 percent (SA) from second quarter 1979 figures and 3.2 percent (SA) from third quarter 1978. Yet total employment rose only 0.6 percent (SA) during the third quarter compared to the second quarter, and was 3.3 percent (SA) more than the same quarter last year. These aggregate data reflect a general upward trend in the unemployment rate as the state economy becomes less able to absorb a growing labor force.

The number of manufacturing jobs in September and in the third quarter of 1979 exceeded the same figures for last year; however, the third quarter figure of 34,800 (SA) was 1.1 percent less than the comparable second quarter 1979 figure. Employment in wholesale and retail trade was stronger. The number of jobs in retail sales was up 5.7 percent (SA) during both September and third quarter 1979 compared with the same periods in 1978. However, little growth was demonstrated in September compared to August, a month when retailers have historically begun to expand employment for holiday shopping. Jobs in wholesale trade showed greater growth than in retail trade during both September and the third quarter compared to the same period in 1978. The number of jobs in the Transportation, Communication and Utilities sector increased 4.4 percent for both September and the third quarter of 1979 over the same figures for the previous year. Figures for September were up 4.0 percent compared with August.

Because of the end of the summer semester at state universities, a drop in government employment during August is not unusual. The decline this August, however, was greater than normal.

During September the figures for state and local government employment rebounded, but federal government continued to register negative growth. This is the normal pattern for September. Compared to the second quarter 1979, third quarter federal employment grew 4.9 percent, state employment declined 4.8 percent and local government employment fell 7.0 percent.

The Services sector remained relatively steady. The number of wage workers grew 1.9 percent (SA) in September and 2.0 percent (SA) in the third quarter compared to the same periods last year. Due to declining growth of real personal income and last summer's gasoline shortages, tourist-related indicators reflected some softening in the state economy. In particular, employment in lodging and visits to national parks showed significant weakness. Jobs in the hotel and motel business (i.e., lodging) for September and third quarter 1979 were both down 2.0 percent (SA) compared to similar periods in 1978. Visits to national parks showed even greater reductions. In comparison with like periods in 1978, visits declined almost 9 percent (SA) in September and more than 6 percent (SA) during the third quarter.

The Financial sector also demonstrated mixed behavior. Bank debits, up significantly from last year, were down 16.9 percent (SA) in September compared to August, and down 22.7 percent (SA) in the third quarter from second quarter 1979. Demand deposits for September and the third quarter of this year were down slightly compared to the same periods in 1978. New bank loans in September were up 20.0 percent (SA) from last year's figures and up 20.7 percent (SA) from the previous month's amounts. Time deposits were more than 12 percent greater for both September and the third quarter compared to those periods last year. They were 3.0 percent greater in the third quarter of this year than the second. New Mexico savings capital, which represents the total deposits in the state's savings and loan associations, was 12.1 per-

cent greater both in September and the third quarter than the same periods in 1978. But growth during September, 1979 declined more than 1.8 percent compared to August.

Although strong during the last few years, the Construction sector also showed signs of decline. Because of the increasing cost and unavailability of mortgage money, as well as the rising prices of homes, this slowdown was most marked in the residential subsector. Residential building permits were down 25.3 percent (SA) in September and down 11.6 percent (SA) in the third quarter compared to like periods last year; September permits declined 12.6 percent (SA) compared to August. Residential construction contracts, an indicator of future activity, declined 6.3 percent (SA) during third quarter 1979 compared to 1978, and fell 5.1 percent (SA) compared to second quarter 1979. September's commercial construction figures declined 10.5 percent from August's level, which had already fallen more than 60 percent in August. Nonbuilding construction contracts remain robust.

Coal production in New Mexico decreased nearly 9 percent in September compared with the same month last year, and fell 17.2 percent from August, 1979. This was due to declining prices and demand for coal at the national level. This pattern will probably reverse as more oil-fired plants are transformed to coal burning and as EPA air standards are relaxed.

In summary, growth of the state economy has become more moderate, reflecting the economic slowdown at the national level. Declining growth in real personal income is being felt in many sectors of the state's economy. In particular, it has affected the Trade and Services sectors, and to a lesser degree, Manufacturing. Soaring interest rates combined with New Mexico's current usury laws will continue to restrict the availability of construction money to businesses and households. The outlook for the state is one of more moderate economic activity in the immediate future.

ECONOMIC INDICATORS

	Quarterly Averages			
	1978 Fourth Quarter	First Quarter	1979 Second Quarter	Third Quarter
1. GENERAL				
Civilian Labor Force ¹ (000)	534.8	525.0	544.1	553.9
Seasonally Adjusted*	534.0	538.9	540.4	544.8
Total Employment ¹ (000)	506.0	493.5	514.4	523.6
Seasonally Adjusted*	504.5	508.9	510.5	513.8
Unemployment ¹ (000)	28.8	31.6	29.7	30.3
Seasonally Adjusted*	29.6	30.0	29.9	31.0
Unemployment Rate (%)	5.4	6.0	5.5	5.5
Seasonally Adjusted*	5.5	5.6	5.5	5.7
Weekly New Unemployment Insurance Claims	1,302.7	1,436.0	1,171.7	1,114.0
Seasonally Adjusted*	1,259.3	1,236.4	1,294.1	1,231.3
Nonagricultural Wage/Salary Employment ² (000)	455.4	449.9	465.8	471.2
Seasonally Adjusted*	454.5	458.4	463.0	466.6
New Business Incorporations	201.7	237.7	240.7	na
Business Failure Liabilities (\$000)	0.0	58.0	na	na
2. AGRICULTURAL RECEIPTS				
From Livestock and Products (\$ mil.)	na	na	na	na
Seasonally Adjusted*	na	na	na	na
From Crops (\$ mil.)	na	na	na	na
Seasonally Adjusted*	na	na	na	na
3. MINING PRODUCTION				
Petroleum (000 bbls.)	6,827.3	6,454.2	6,578.6	na
Natural Gas (bil. cu. ft.)	97.9	95.7	95.4	na
Seasonally Adjusted*	96.1	93.7	96.8	na
Copper Ore (000 tons)	11.9	13.8	16.6	na
Coal Production (000 short tons)	1,053.0	1,033.3	978.3	944.0
4. CONSTRUCTION				
Residential Building Permits (\$ mil.)	20.7	24.8	30.1	25.7
Seasonally Adjusted*	24.3	24.1	26.5	25.5
Residential Construction Contracts (\$ mil.)	33.9	40.2	48.8	40.3
Seasonally Adjusted*	40.7	38.1	43.0	40.8
Nonresidential Construction Contracts (\$ mil.)	24.7	16.1	26.0	28.5
Nonbuilding Construction Contracts (\$ mil.)	17.1	18.2	15.3	26.4
5. MANUFACTURING				
Employment ² (000)	34.1	34.1	35.1	35.1
Seasonally Adjusted*	33.6	34.8	35.2	34.8
Average Weekly Hours	38.9	39.6	39.5	39.0
Seasonally Adjusted*	38.4	39.9	39.7	39.1

ECONOMIC INDICATORS (continued)

July	1979		Percentage Change				Percentage Change		
	August	Septem.	IV 1977- IV 1978	I 1978- I 1979	II 1978- II 1979	III 1978- III 1979	July 78- July 79	Aug. 78- Aug. 79	Sep. 78- Sep. 79
555.7	551.4	554.5	3.5	4.3	3.6	3.2	3.4	2.9	3.3
543.5	541.8	549.0	3.5	4.4	3.6	3.2	3.4	2.9	3.4
525.1	521.6	524.0	4.9	4.7	3.8	3.3	3.6	3.0	3.3
513.8	511.4	516.3	4.9	4.7	3.8	3.3	3.6	3.0	3.3
30.6	29.8	30.5	- 15.5	- 1.0	- 0.2	2.6	0.7	2.1	5.2
29.7	30.5	32.7	- 15.6	- 1.0	- 0.3	2.7	0.8	1.9	5.1
5.5	5.4	5.5	- 18.2	- 4.7	- 2.8	- 0.5	- 3.5	0.0	1.9
5.5	5.6	6.0	- 18.4	- 5.1	- 3.6	- 0.5	- 2.5	- 1.0	1.7
1,256.0	1,043.0	1,043.0	7.4	5.8	0.7	2.6	7.3	- 9.3	- 6.1
1,323.5	1,144.9	1,225.6	7.1	5.0	0.3	2.9	7.4	- 9.7	- 6.1
470.0	470.7	473.0	6.4	5.5	4.9	4.1	4.2	3.8	4.1
465.4	465.1	469.3	6.4	5.5	4.9	4.1	4.2	3.8	4.2
263.0	na	na	22.7	26.9	9.4	na	36.3	na	na
na	na	na	-100.0	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
6,681.9	na	na	- 6.1	- 7.7	- 5.8	na	- 4.5	na	na
94.8	na	na	- 1.5	- 2.8	1.1	na	- 0.9	na	na
96.8	na	na	- 1.3	- 2.8	1.1	na	- 1.0	na	na
14.2	16.7	na	- 19.1	3.8	47.1	na	74.1	52.6	na
671.0	1,182.0	979.0	20.8	3.7	- 0.2	- 12.9	- 26.2	- 6.8	- 8.9
28.2	26.8	22.0	- 3.0	- 7.9	- 1.0	- 11.1	7.3	- 13.1	- 25.4
27.4	26.2	22.9	- 3.4	-10.3	- 0.5	- 11.6	7.3	- 13.6	- 25.3
46.3	39.6	35.1	- 16.1	7.2	9.7	- 6.5	2.6	- 20.2	1.2
40.9	39.4	42.1	- 14.8	7.2	9.0	- 6.3	2.1	- 19.9	1.8
49.2	19.1	17.1	2.0	- 1.9	84.6	64.3	102.7	16.0	51.9
20.9	26.2	31.9	- 8.4	1.5	- 58.4	6.7	- 13.5	- 34.1	217.5
34.9	35.2	35.3	2.5	4.9	6.6	4.3	4.8	4.5	3.8
34.8	34.7	34.9	2.5	4.9	6.5	4.4	4.9	4.6	3.8
39.0	39.2	38.8	- 3.3	- 0.7	0.6	1.4	1.6	2.1	0.5
39.2	39.5	38.6	- 3.3	- 0.8	0.6	1.4	1.7	2.1	0.5

ECONOMIC INDICATORS (continued)

	Quarterly Averages			
	1978	1979		
	Fourth Quarter	First Quarter	Second Quarter	Third Quarter
6. <u>TRANSPORT./COMMUNIC./UTIL.</u>				
Employment ² (000)	27.9	27.9	27.9	28.0
7. <u>TRADE</u>				
Wholesale Employment ² (000)	20.7	20.8	21.3	21.7
Retail Employment ² (000)	83.9	82.5	85.7	87.8
Seasonally Adjusted*	83.2	85.3	85.6	85.9
Average Weekly Hours	35.4	34.5	35.2	35.7
8. <u>FINANCE</u>				
Bank Debits (\$ mil.)	3,470.6	5,907.3	10,958.6	8,514.1
Seasonally Adjusted*	3,519.4	5,997.3	10,891.2	8,418.7
New Bank Loans (\$ mil.)	267.5	235.1	255.7	271.4
Seasonally Adjusted*	258.9	235.5	259.5	283.8
Bank Demand Deposits (\$ mil.)	1,060.0	962.5	1,045.3	1,035.8
Bank Time Deposits (\$ mil.)	1,679.4	1,712.5	1,779.1	1,832.0
Total Savings Deposits (Savings and Loan Assoc.) (\$ mil.)	1,712.4	1,779.1	1,814.3	1,852.9
New Savings and Loans Received (\$ mil.)	101.1	118.2	115.4	148.7
9. <u>SERVICES AND TOURISM</u>				
Service Employment ² (000)	88.3	84.3	89.6	92.8
Seasonally Adjusted*	90.0	86.8	88.5	89.6
Lodging Employment ² (000)	9.1	8.9	9.6	9.8
Seasonally Adjusted*	9.5	9.4	9.5	9.0
Visits to National Parks/Monuments (000)	79.0	95.3	201.4	251.1
Seasonally Adjusted*	145.0	179.3	165.4	148.8
10. <u>GOVERNMENT</u>				
Federal Employment ² (000)	35.1	35.9	37.1	38.9
State Employment ² (000)	33.7	33.7	33.4	31.8
City and County Employment ² (000)	49.8	50.8	51.3	47.7

* Seasonally adjusted figures are economic time series which have had seasonal variations removed with statistical processes. These purely seasonal variations include the effects of: the opening and closing of school, the annual pattern of seasons (especially applicable to agricultural data), holidays, and other annually recurring events which influence economic activity. By removing these seasonal variations from raw economic data, month-to-month analysis of trends and unusual fluctuations in economic activity is facilitated.

na Not available.

1 Number of persons by place of residence.

2 Number of jobs by place of work.

ECONOMIC INDICATORS (continued)

			Percentage Change				Percentage Change		
July	1979 August	Septem.	IV 1977- IV 1978	I 1978- I 1979	II 1978- II 1979	III 1978- III 1979	July 78- July 79	Aug. 78- Aug. 79	Sep. 78- Sep. 79
27.4	27.7	28.8	10.2	8.7	6.6	4.4	4.2	4.5	4.4
21.7	21.8	21.7	6.7	8.2	7.0	6.5	6.4	6.9	6.4
87.0	88.3	88.2	5.8	6.6	5.4	5.6	5.3	5.9	5.6
85.3	86.1	86.4	5.8	6.5	5.4	5.7	5.3	6.0	5.7
35.8	35.9	35.5	- 1.1	- 2.9	- 1.3	- 1.5	- 2.4	- 2.2	0.3
10,095.0	9,163.0	6,284.2	27.9	86.0	272.7	158.2	205.6	165.0	100.6
9,461.1	8,628.7	7,166.3	27.6	86.7	273.5	154.3	195.3	162.4	108.4
281.6	267.4	265.2	10.4	- 0.1	1.3	12.4	21.1	3.2	14.1
293.1	253.0	305.4	10.8	0.0	1.3	13.4	16.6	3.3	20.0
1,021.0	1,041.0	1,045.5	10.6	0.1	3.7	- 1.1	- 1.6	0.0	- 1.6
1,817.0	1,827.9	1,851.1	10.8	10.8	12.4	12.2	11.7	12.1	12.7
1,829.3	1,848.5	1,880.9	18.0	17.0	14.7	12.1	12.0	12.3	12.1
173.9	147.6	124.7	44.1	24.1	26.1	51.2	58.8	61.1	32.7
93.8	93.5	91.2	8.0	2.2	2.5	2.0	2.1	2.0	1.9
88.9	89.4	90.6	8.0	2.2	2.4	2.0	2.1	2.1	1.9
9.9	9.8	9.6	5.5	4.4	3.7	- 2.0	- 1.0	- 3.0	- 2.0
9.0	8.9	9.1	5.5	4.3	3.7	- 2.0	- 1.0	- 2.9	- 2.0
273.5	356.5	123.2	- 20.4	- 7.6	3.4	- 6.9	- 28.3	21.4	- 8.3
118.4	183.3	144.6	- 23.0	-11.7	9.1	- 6.3	- 28.3	19.9	- 8.7
39.2	39.0	38.6	2.2	5.2	5.4	9.6	9.8	9.6	9.4
31.6	30.6	33.2	12.1	10.0	6.7	1.5	2.3	0.3	1.8
47.4	46.7	49.1	1.8	2.0	2.0	- 0.8	0.2	- 3.1	0.6

Sources: New Mexico Department of Human Services, Employment Services Division: Sections 1,5,6,7,9,10; Dun and Bradstreet, Inc.: Section 1; USDA Statistical Reporting Service: Section 2; Oil Conservation Commission: Section 3; New Mexico Bureau of Revenue: Section 3; Building Inspectors' reports, 18 cities: Section 4; F.W. Dodge Co. (a division of McGraw-Hill, Inc.): Section 4; Federal Power Commission: Section 6; Bank reports (36): Section 8; Federal Home Loan Bank of Little Rock: Section 8; United States Department of the Interior, National Park Service: Section 9.

VALUE OF BUILDING PERMITS--SELECTED CITIES

	Residential				Nonresidential			
	September 1978	September 1979	Cumulative Total Through September		September 1978	September 1979	Cumulative Total Through September	
			1978	1979			1978	1979
Alamogordo	\$ 719,500	\$ 575,800	\$ 5,207,042	\$ 5,583,205	\$ 305,900	\$ 61,836	\$ 1,409,875	\$ 895,151
Albuquerque	19,038,812	11,945,182	149,706,439	149,091,993	3,854,679	5,363,480	29,914,346	55,608,014
Artesia	115,000	457,000	1,377,706	2,316,000	400	1,818,100	51,850	2,810,965
Carlsbad	342,000	496,900	5,821,185	2,356,782	69,250	40,000	1,378,250	1,840,540
Clayton	47,000	117,000	403,341	419,586	0	46,310	9,600	163,310
Clovis	383,774	700,740	5,552,183	4,974,372	114,032	111,000	1,118,893	1,674,159
Deming	110,500	35,000	2,432,700	2,987,700	0	0	272,000	927,900
Farmington	875,503	838,248	13,313,276	8,798,327	1,345,685	326,716	8,620,181	4,431,345
Gallup	404,408	817,080	5,498,790	4,829,702	336,555	4,500	1,973,735	5,553,780
Grants	905,343	442,246	4,175,663	3,708,818	112,000	49,000	8,103,360	896,700
Hobbs	449,000	1,059,000	8,262,800	6,562,750	58,900	480,150	3,431,475	4,858,010
Las Cruces	2,978,541	1,914,345	17,853,061	17,374,872	230,000	130,500	8,690,219	3,102,047
Las Vegas	67,488	80,128	1,768,878	857,923	0	0	0	1,344,659
Lordsburg	0	0	4,450	55,500	44,608	0	328,808	73,500
Portales	130,000	85,240	1,192,390	1,277,888	0	0	476,500	470,300
Raton	82,175	48,600	1,567,053	450,465	0	13,930	950,070	394,930
Roswell	812,600	994,186	10,084,719	8,975,275	11,400	102,220	1,908,730	1,457,086
Santa Fe	2,102,844	1,329,078	23,870,805	20,571,659	816,000	280,000	6,128,254	3,415,800
Tucumcari	0	100,000	351,467	331,500	400,000	280,000	448,692	1,628,002
TOTAL	\$29,564,488	\$22,035,773	\$258,443,948	\$241,524,317	\$7,699,409	\$9,107,742	\$75,214,838	\$91,546,198

Source: Individual reports by city building inspectors.

ESTIMATED CIVILIAN LABOR FORCE AND EMPLOYMENT

	New Mexico			Albuquerque SMSA ¹		
	September 1978 ^r	August 1979 ^r	September 1979 ^p	September 1978 ^r	August 1979 ^r	September 1979 ^p
TOTAL CIVILIAN LABOR FORCE	536,500	551,400	554,500	197,300	202,900	204,700
Employment ²	507,500	521,600	524,000	186,700	192,100	193,900
Unemployment	29,000	29,800	30,500	10,600	10,800	10,800
Percentage of Labor Force	5.4	5.4	5.5	5.4	5.3	5.3
Nonagricultural Wage and Salary Employment	454,300	470,700	473,000	182,000	186,900	188,500
Mining	25,000	27,400	27,200	na	na	na
Contract Construction	37,300	38,700	38,100	16,200	16,300	16,000
Manufacturing	34,000	35,200	35,300	17,600	18,100	18,200
Durable Goods	19,600	20,800	20,800	12,100	12,500	12,600
Nondurable Goods	14,400	14,400	14,500	5,500	5,600	5,600
Transportation and Public Utilities	27,600	27,700	28,800	10,700	11,300	11,800
Trade	103,900	110,100	109,900	46,100	48,400	48,700
Wholesale	20,400	21,800	21,700	12,200	13,100	13,100
Retail	83,500	88,300	88,200	33,900	35,300	35,600
Finance, Insurance and Real Estate	20,300	21,800	21,600	10,200	11,200	11,100
Services and Miscellaneous	89,500	93,500	91,200	41,000	42,100	42,000
Government	116,700	116,300	120,900	40,200	39,500	40,700
Federal	35,300	39,000	38,600	12,200	12,800	12,700
State	32,600	30,600	33,200	10,400	8,900	9,800
Local	48,800	46,700	49,100	17,600	17,800	18,200

na Not available, less than 50 jobs.

p Preliminary.

r Revised.

¹ Albuquerque Standard Metropolitan Area includes Bernalillo and Sandoval Counties.² Includes labor disputes.

Source: New Mexico Employment Security Department.

ALBUQUERQUE¹ BANKING DATA (\$000s)

	September 1978	September 1979	% Change September 1978- September 1979
BANKS			
Bank Debits	\$2,170,909.4	\$5,208,821.0	139.9
New Loans and Discounts	113,717.5	129,955.3	14.3
Demand Deposits	564,063.7	546,672.1	- 3.1
Time Deposits	822,534.1	912,931.3	11.0
SAVINGS AND LOAN			
Savings Deposits	\$ 760,700.0	\$ 854,200.0 ^p	12.3
New Savings Received	58,300.0	72,200.0 ^p	23.8

^p Preliminary.

¹ Bernalillo County for bank information, Albuquerque SMSA for savings and loan data.

Source: Five reporting banks and Federal Home Loan Bank of Little Rock.

CONSUMER PRICE INDEXES AND INDEXES OF SELECTED CATEGORIES U.S. City Average (1967=100)

	All Urban Consumers				Revised Series, Wage Earners and Clerical Workers			
			% Change				% Change	
	Aug. 1979	Sept. 1979	Sep. 78- Sep. 79	Aug. 79- Sep. 79	Aug. 1979	Sept. 1979	Sep. 78- Sep. 79	Aug. 79- Sep. 79
ALL ITEMS	221.1	223.4	12.1	1.0	221.5	223.7	12.4	1.0
Food	236.3	237.1	10.0	0.3	236.5	237.3	10.2	0.3
Housing	231.5	234.6	13.1	1.3	231.5	234.5	13.3	1.3
Apparel and Upkeep	166.3	169.8	4.9	2.1	166.2	169.3	4.6	1.9
Transportation	219.6	221.4	17.3	0.8	220.7	222.4	17.5	0.8
Medical Care	241.8	243.7	9.5	0.8	242.6	244.7	9.8	0.9
Entertainment	190.2	191.1	7.2	0.5	188.9	190.2	7.2	0.7
Other Goods and Services	197.0	201.7	7.4	2.4	197.2	200.6	7.2	1.7

Source: U.S. Department of Labor, News.

HOURS AND EARNINGS OF PRODUCTION, CONSTRUCTION AND NONSUPERVISORY EMPLOYEES New Mexico

	Average Weekly Hours			% Change Sept. 78- Sept. 79	Average Hourly Earnings			% Change Sept. 78- Sept. 79
	Sept. 1979 ^p	Aug. 1979	Sept. 1978		Sept. 1979 ^p	Aug. 1979	Sept. 1978	
Mining	45.4	44.6	43.6	4.1	8.58	8.53	7.63	12.5
Construction	36.1	35.0	37.4	-3.5	8.72	8.85	8.14	7.1
Manufacturing	38.8	39.2	38.6	0.5	5.57	5.43	4.88	14.1
Durable Goods	39.6	40.3	39.1	1.3	6.03	5.82	5.28	14.2
Nondurable Goods	37.5	37.4	37.8	-0.8	4.77	4.75	4.25	12.2
Commun. and Utilities	41.7	42.2	41.8	-0.2	7.57	7.49	7.01	8.0
Trade ¹	35.5	35.9	35.4	0.3	5.52	5.49	5.09	8.4
Banking	42.7	40.8	39.5	8.1	3.70	3.65	3.45	7.2

^p Preliminary.

¹ Excludes eating and drinking places.

Source: New Mexico Employment Security Department.

ALBUQUERQUE FOOD PRICE INDEX: OCTOBER 1979

June 1974 = 100(all items)

	Oct. 79 Index	% Change		
		June 74 Oct. 79	Oct. 78 Oct. 79	Sep. 79 Oct. 79
ALL FOOD ITEMS	150.7	50.7	9.2	-1.7
Cereals and Baked Products	144.0	44.0	15.1	-0.7
Meat, Fish, Poultry	159.2	59.2	10.2	-4.4
Fruits and Vegetables	148.9	48.9	4.0	0.0
Dairy Products	135.8	35.8	9.5	0.1
Other Food Items	153.3	53.3	9.2	-0.4

Food Items	Quantity	October 1979		% Change		
		Price	Index	June 74 Oct. 79	Oct. 78 Oct. 79	Sep. 79 Oct. 79
Flour, all purpose	5 lb	\$1.08	93.6	- 6.4	7.3	- 4.1
Corn Flakes	12 oz	.60	154.5	54.5	2.6	- 3.2
Bread, white	1b	.54	153.9	53.9	25.8	0.0
Cookies, cream	16 oz	1.16	147.8	47.8	10.5	2.1
Hamburger	1b	1.63	187.9	87.9	38.2	- 0.2
Round steak, bone-in	1b	2.41	191.7	91.7	22.2	5.0
Sirloin steak, boneless	1b	2.69	155.5	55.5	15.5	- 9.0
Chuck roast, blade	1b	1.54	203.6	103.6	18.3	-11.7
Beef liver	1b	1.29	138.1	38.1	43.9	- 1.1
Pork chops	1b	2.22	157.0	57.0	- 6.1	0.1
Bacon, sliced	1b	1.82	157.7	57.7	- 12.8	- 6.5
Pork roast, loin	1b	1.66	122.6	22.6	8.5	- 6.4
Frankfurters	1b	2.07	164.2	64.2	14.9	0.8
Fryers, whole	1b	.52	104.4	4.4	- 13.6	-16.9
Tuna, light chunk	6 oz	.88	152.7	52.7	- 3.0	- 2.7
Bananas	1b	.32	160.6	60.6	32.2	- 7.0
Oranges	dozen	1.70	192.4	92.4	- 2.4	6.6
Lettuce	1b	.49	113.0	13.0	8.2	-12.7
Potatoes, except baking	10 lb	1.46	75.8	- 24.2	32.1	23.1
Tomatoes	1b	.56	106.6	6.6	16.2	9.4
Carrots	1b	.45	195.2	95.2	16.6	- 7.7
Onions, yellow	1b	.20	143.2	43.2	17.1	6.1
Fruit cocktail	#303	.58	155.8	55.8	- 2.1	-13.5
Tomatoes, canned	#303	.55	167.7	67.7	0.7	- 0.2
Peas, canned	#303	.41	137.4	37.4	- 8.3	-10.0
Frozen orange juice	6 oz	.49	185.0	85.0	- 0.4	4.2
Frozen broccoli spears	10 oz	.63	154.1	54.1	- 10.3	17.8
Milk	quart	.53	128.0	28.0	10.2	0.4
Evaporated milk	13 oz	.45	153.5	53.5	12.0	0.9
Ice cream	1/2 gal	1.62	139.0	39.0	9.2	5.9
Cheese, sliced	6 oz	.89	148.9	48.9	6.2	- 6.2
Eggs, AA large	dozen	.78	128.5	28.5	0.3	- 0.9
Margarine	1b	.72	118.9	18.9	- 3.1	- 2.8
Sugar	5 lb	1.30	89.9	- 10.1	- 1.4	- 1.1
Coffee	1b	3.17	245.5	145.5	11.4	- 1.2
Instant coffee	6 oz	3.59	226.9	126.9	10.1	7.1
Cola drink	10 oz ctn	1.31	167.0	67.0	13.8	6.7
Chicken noodle soup	10 oz	.30	130.3	30.3	4.2	0.3
Baby food, strained	4 oz	.24	179.4	79.4	15.4	- 2.6
Frozen french fries	9 oz	.41	192.4	92.4	42.9	-10.7

na Not available.

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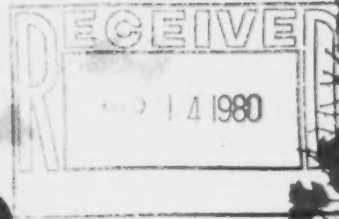
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Wood—A Popular Fuel in New Mexico¹

by

JAMES R. GRAY, MARY A. BRAY and JOHN M. FOWLER

[Dr. James R. Gray is a professor in the Department of Agricultural Economics and Agricultural Business at New Mexico State University. He has been conducting forestry studies in New Mexico since 1960. Mary A. Bray was a graduate research assistant in the Department in 1977-79, and is also a graduate of the University of Albuquerque in business administration and finance. Dr. John M. Fowler is an assistant professor, also in the Department of Agricultural Economics and Agricultural Business, and he joined the research faculty in 1979. This study is a part of a McIntire-Stennis forestry research project.]

It is patriotic to save energy. Besides, many New Mexicans believe money can be saved by burning wood, particularly if it is "free." Per capita consumption of fuelwood is higher in New Mexico than in any other Mountain Region state. Almost 46,000 parties in New Mexico harvested more than over 132,000 cords of wood in the 1977-78 harvest year in the Forest Service's give-away program.²

Did these wood harvesters really save energy? Where did they come from, and where did they go? How much wood did they get, and how did they use it? Answers to these and other questions suggest opportunities for major shifts in policy dealing with the state's shrinking supplies of fuelwood.

How the Study Was Made

A random sample was drawn from the 26,000 people who contacted the Forest Service in 1977-78 to get information about free wood. Questionnaires were mailed to 2,700 individuals. Usable questionnaires were returned by 507 people.³ (See Appendix A.) The wood harvesters were questioned about amounts of wood harvested, by major species; locations of homes and wood-harvest areas; time, investments and costs associated with harvest; and characteristics of home construction, major heating sources, and wood-burning equipment in their homes.

An energy model was developed to include gross heat energy received (based on quantity of wood burned), heat content of wood, and effi-

ciency of burning unit. Also included were quantities of petroleum products used (gasoline and oil), heat content of each kind of petroleum product used, and estimated net energy depreciation of the vehicles and equipment used for wood harvesting.⁴ Harvesting equipment included chain saws, pro-rated share of vehicles and trailers used for wood harvesting, and other equipment (e.g., axes, splitting equipment, etc.). A wood inventory exhaustion model was also developed to include inventory of accessible dead and down wood, annual increments of accessible dead and down wood, and anticipated changes in amounts harvested.

Some Characteristics of Wood Harvesting and Harvesters

The state was divided into five areas approximating locations of the national forests in New Mexico (Figure 1). The largest average amount of wood harvested per party in 1977-78 was from the Northern Border area; the smallest amounts were harvested by parties from the Central and Southeast areas (Table 1). As expected, there was a close relationship between home area of harvester and the area in which the wood was harvested. The largest discrepancy occurred in the Central area, indicating that many free-wood harvesters from this area traveled outside of their home area to gather wood.

Free-wood harvesting parties from the Central area traveled the farthest and used the largest amounts of gasoline (Table 2). They also gathered

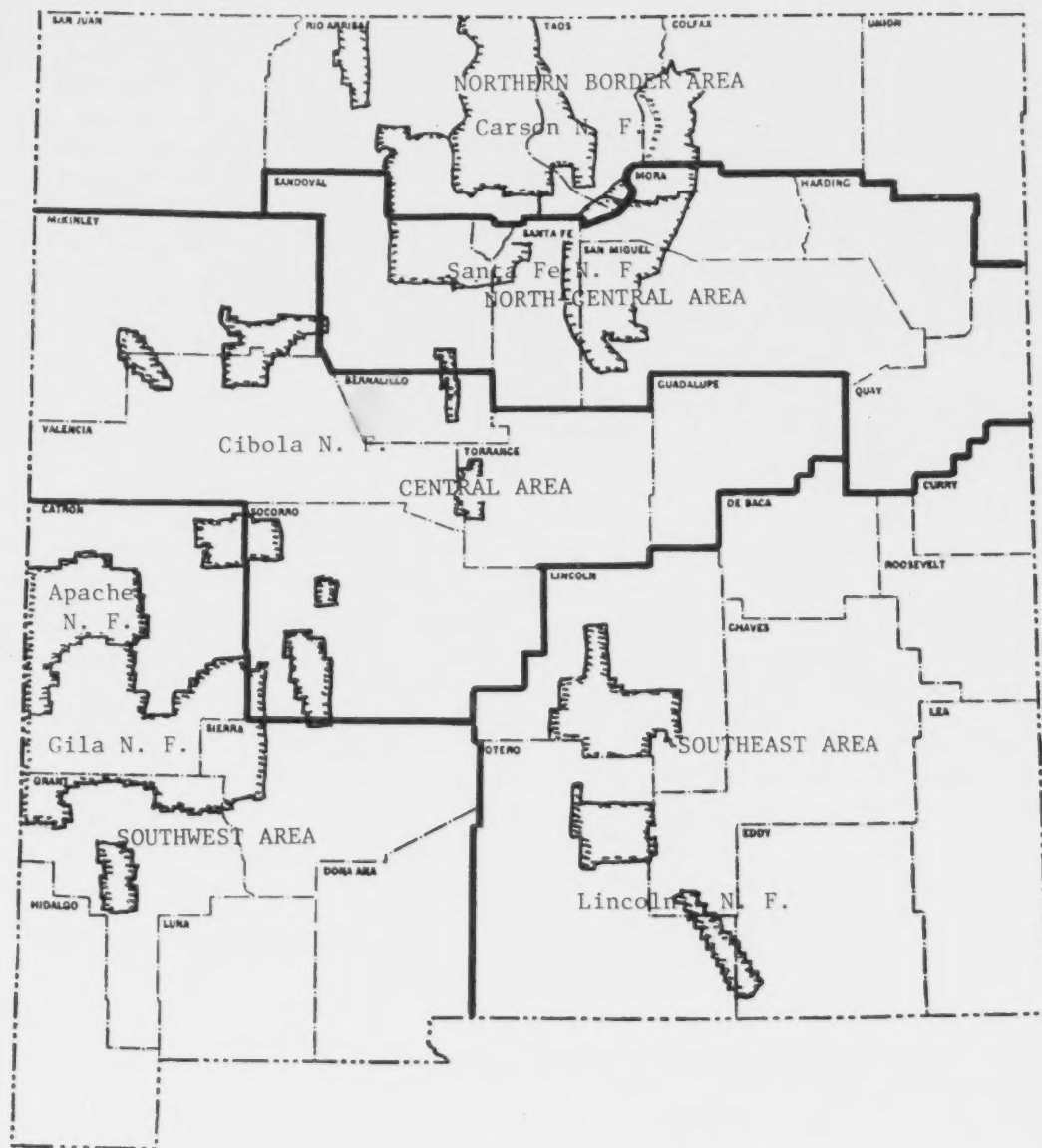


FIGURE 1

AREAS OF NEW MEXICO USED AS THE BASIS FOR REPORTING
CHARACTERISTICS OF FREE-USE WOOD HARVESTERS, 1977-78

TABLE 1

AVERAGE AMOUNT OF FUELWOOD HARVESTED PER PARTY PER YEAR BASED ON HOME AREA OF HARVESTER AND LOCATION OF HARVEST AREA, NEW MEXICO 1977-78 SEASON

Area	Average Amounts Harvested Per Party Based on:	
	Home Location (cords)	Harvested in Area (cords)
Northern Border	6.33	6.07
North-Central	4.05	3.47
Central	3.63	4.67
Southeast	3.61	3.50
Southwest	4.25	4.50
Total State	4.78	4.77

slightly more wood per trip than harvesters in other areas—one cord per trip versus 0.8 cord by those in the North-Central and Southeast areas.

Pinyon was the most popular wood harvested statewide (Table 3); it was heavily favored in the Northern Border and Central areas. Juniper was harvested more than the other species in the Southeast and Southwest areas because of its availability. Ponderosa pine was slightly favored in the North-Central area.

The investment in wood harvesting equipment, including harvest-related shares of trucks and trailers, averaged \$607 per party in 1977-78 (Table 4). Trucks comprised 56 percent of the total investment, and chain saws 32 percent. The investment varied widely by area, mainly because of the percentage of use that was assigned to the trucks for wood hauling.

TABLE 2

AVERAGE ROUND-TRIP MILEAGE AND GASOLINE USE OF FUELWOOD HARVESTERS BY HOME AREAS, NEW MEXICO 1977-78 SEASON

Home Area	Average Round-Trip Mileage (miles)	Average Gasoline Used ¹ :	
		Per Trip (gallons)	Per Cord
Northern Border	52	6.8	7.5
North-Central	57	6.7	8.4
Central	129	13.5	13.5
Southeast	80	9.4	11.7
Southwest	89	10.3	11.5
Total State	84	9.6	10.6

1 Included gasoline for vehicles, chainsaws, and any other gasoline-powered equipment used in the wood harvesting activity.

The amount of fuelwood harvested by those obtaining permits from the Forest Service almost doubled from 1972-73 to 1977-78 (Table 5). Amounts increased the least for harvesters living in the Northern Border area, and the most for those living in the Central, Southeast and Southwest areas. A three-part question concerning anticipated changes in wood consumption was asked of respondents. (See question 24 in Appendix A.) The question dealt with changing energy prices and supplies. Those living nearest to wood supplies indicated the largest reactions to changing conditions.

The different reactions of fuelwood harvesters in the five areas of New Mexico can be based partly on the kinds of burning units and partly on

TABLE 3

MAJOR SPECIES HARVESTED UNDER FREE-USE CONDITIONS ON NATIONAL FORESTS IN NEW MEXICO BY HARVEST AREAS 1977-78 SEASON

Major Species	Northern Border		North-Central		Central		Southeast		Southwest		Total State	
	Cords	Percent	Cords	Percent	Cords	Percent	Cords	Percent	Cords	Percent	Cords	Percent
Pinyon	474	56	179	39	153	52	74	25	47	12	927	40
Juniper	47	6	24	5	47	16	98	35	230	57	446	20
Ponderosa Pine	217	26	203	44	58	21	70	24	40	10	588	26
Oak	20	2	12	3	6	2	30	10	72	18	140	6
Other	85	10	40	9	28	9	17	6	16	3	186	8
Total	843	100	458	100	292	100	289	100	405	100	2,287	100

TABLE 4
AVERAGE INVESTMENT OF FUELWOOD HARVESTERS BY HOME AREAS, NEW MEXICO
1977-78 SEASON
(dollars)

Area	Chainsaws	Trailers ¹	Trucks ¹	Other ²	Total
Northern Border	214	1	467	57	779
North-Central	180	30	276	43	529
Central	172	1	293	50	516
Southeast	186	2	171	79	438
Southwest	211	2	404	56	673
Total State	194	5	341	67	607

1 Investment based on percent of annual use for hauling wood, varying between 2.5 percent (Northern Border) and 5.5 percent (North-Central) for trailers, and 6.8 percent (Southeast) and 15.7 percent (Northern Border) for trucks.

2 Included axes, wedges, mauls, splitters, gas containers, shovels, and sharpening equipment.

their uses of fuelwood. The harvesters in the Northern Border area had the lowest percentages of homes with fireplaces, the highest percentages with stoves, and the second highest proportion⁵ of homes using wood either for cooking or a combination of heating and cooking (Table 6). More wood was burned in stoves in this area than in fireplaces. The Central and Southeast areas generally had higher percentages of homes with fireplaces, lowest percentages of homes with stoves, and lower percentages of homes using wood for cooking purposes.

Harvesters made about five trips per year from the North-Central, Central and Southeast areas, and almost seven and eight trips per year from the Northern Border and Southwest areas. From 84 to 92 percent of the wood used by respondents was gathered from national forests in or near the five areas; these percentages were expected because the sample was drawn from national forest users. About 11 to 14 hours were spent per trip, almost equally divided⁶ among travel; sawing and loading; and unloading, stacking and splitting activities. Only one to two hours per trip were used

TABLE 5
INDEX OF CHANGES IN AMOUNTS OF FUELWOOD HARVESTED OVER TIME AND WITH CHANGING CONDITIONS BY HOME AREAS,
NEW MEXICO
1972-73, 1977-78, AND 1980-81 SEASONS

Period or Situation	Index ¹ of Change in:					State Total
	Northern Border	North- Central	Central	South- east	South- west	
1972-73	80	52	43	42	40	53
1977-78	100	100	100	100	100	100
In 1980-81 with: No Change in Wood Supplies or Energy Prices	120	122	113	111	117	117
No Change in Wood Supplies, Increased Energy Prices ²	137	141	119	125	127	129
Decreased Wood Supplies ³ and No Change in Energy Prices	106	121	83	90	95	98
Decreased Wood Supplies and Increased Energy Prices	145	171	99	112	121	126

1 Index 1977-78 = 100

2 Energy prices continue trend of annual increase of 15 percent from 1977-78 to 1980-81.

3 Travel distances doubled in 1980-81 from 1977-78 distances of 52 to 129 miles, depending on area.

TABLE 6

CHARACTERISTICS AND USES BY WOOD HARVESTERS OF FIREPLACES AND WOOD-BURNING STOVES BY HOME AREAS,
NEW MEXICO
1977-78 SEASON

Characteristics	Units	Number in Home Area of:					State Total
		Northern Border	North- Central	Central	South- east	South- west	
Proportion of Homes with Fireplaces	percent	62	78	82	89	63	73
Proportion of Fireplaces with Heat-saving Devices	percent	42	27	36	57	54	43
Average Amount of Wood Burned in Fireplaces	cords	2.6	2.3	2.1	2.6	2.0	2.3
Proportion of Homes with Stoves	percent	60	40	26	22	46	40
Stoves Used For:							
Heating	percent	55	54	67	82	76	66
Cooking	percent	5	7	6	6	4	6
Both	percent	40	39	27	12	20	28
Average Amount of Wood Burned in Stoves	cords	3.2	1.6	1.1	.6	1.9	1.8

for recreation. The number of people per party varied by area from an average of 2.1 to 2.5 persons. The families of fuelwood harvesters averaged from 2.2 to 2.5 persons, the heads of the households averaged from 42 to 52 years of age, and the numbers of children residing in the households averaged from 1.0 to 1.5 for the various areas. Modal household incomes of fuelwood harvesters in 1977-78 were \$5,000 to \$9,999 in the Northern Border area, \$10,000 to \$14,999 in the Southwest area, \$15,000 to \$19,999 in the North-Central and Southeast areas, and \$20,000 to \$24,000 in the Central area.

The Fuelwood Supply Situation

Several estimates were provided by Forest Service officials to aid in estimating total national forest fuelwood supplies. Because 86 percent of the wood harvested from national forests in New Mexico was a combination of pinyon, juniper and ponderosa pine, the supply estimates were limited to these species. According to Forest Service officials, about 55 percent of the total supply of pinyon and juniper and 45 percent of the ponderosa pine are accessible for wood harvesting. And 20 percent of the timber inventory was estimated to be dead or down timber, i.e., eligible for free-wood harvest. Additionally, annual growth can be estimated based on inventory and rotation age for the individual species. The rotation age of pinyon

and juniper is 160 years; ponderosa pine is 170 years. Combination of these estimates yields the following:

- total available dead and down inventory volume accessible to wood harvesters,
- annual green growth becoming available for harvest for fuelwood or other purposes, and
- annual accumulation of dead and down wood that is both accessible and available for fuelwood harvesting.

There were about 3.6 million cords of accessible (dead and down) pinyon, juniper, and ponderosa pine fuelwood on national forests in New Mexico in 1977-1978 (Table 7). Almost half of the inventory was in the Gila and the New Mexico portion of the Apache National Forests. (See Figure 1 for national forest locations.) These national forests also have the largest annual increment of accessible dead and down fuelwood. The smallest inventories were in the Lincoln and Carson National Forests, which also have the smallest annual increments. Not all accessible dead and down wood should be harvested; some dead and down is needed to protect new growth of tree seedlings as well as to serve as part of the cover and food chain for wildlife.

At the 1977-1978 levels of use, the inventories of the Carson and Cibola National Forests will be exhausted in 19 years. Because annual use in 1977-1978 were less than annual increments in

TABLE 7

ESTIMATED INVENTORIES, ANNUAL LEVELS OF USES, AND ESTIMATED NUMBERS OF YEARS TO EXHAUST INVENTORIES OF
PINYON, JUNIPER AND PONDEROSA PINE BY NATIONAL FORESTS IN NEW MEXICO
1977-78 SEASON
(cords)

Situation	National Forests in New Mexico					All Forests
	Carson	Santa Fe	Cibola	Lincoln	Gila ¹	
Inventory, 1977-78 ²	453,599	775,310	537,859	275,156	1,599,181	3,641,105
Annual Use, 1977-78	30,300	25,303	36,031	3,342	18,829	113,805
Annual Increment	5,509	9,364	6,594	3,375	19,448	44,290
	(Years to exhaust inventory) ³					
Continued Use at 1977-78 Levels	19	49	19	+	+	53
Future Use at Projected 1980-81 Levels	12	18	13	48	37	22
Future Use With Increased Energy Prices and 1977-78 Supply Levels	9	13	12	29	28	17
Future Use With 1977-78 Energy Price Levels and Reduced Supplies	16	19	+	+	+	+
Future Use With Increased Energy Prices and Reduced Supply Levels	9	10	20	46	33	21

+ Inventory eventually increasing--no exhaustion of inventory.

¹ Includes New Mexico portion of Apache National Forest.

² Pinyon, juniper and ponderosa pine accumulated in the national forests that is both accessible and dead and down.

³ Quantities demanded based on survey of free-use fuelwood harvesters.

two national forests—Lincoln and Gila—inventories will continue to accumulate in these forests. However, with better management and improved commercial harvesting practices, the annual mortality of live trees may be reduced, which would further restrict the fuelwood supply. Additional roadless areas would further limit accessibility, and wilderness designations would further restrict harvest because of the prohibition of chain saws in the latter area.

Based on responses of wood harvesters concerning their future harvest of fuelwood at 1980 levels (see Table 5), the Carson National Forest will be forced to cut back use to its annual increment in about 12 years, or in about 1990. The Cibola National Forest will have to cut back harvest a year later in 1991. Annual increments in both forests are only about 20 percent of the 1977-1978 annual use. Statewide, the national forests in New Mexico will have about a 53-year inventory supply at 1977-1978 use levels and a 22-year supply at projected 1980 use levels. The average annual statewide increment is less than 40 percent of 1977-1978 use levels.

Fuelwood harvesters in three areas reacted strongly in terms of the amounts they would harvest with reduced supplies (see Table 5). The reductions in harvest were large enough to permit inventory lives to be extended. With increased energy prices as well as reduced supply levels, inventory life would be extended from 17 years to 21 years statewide.

An energy supply of national forest free-use wood of less than about 40 years means that wood burning equipment will not wear out before inventory supplies are exhausted. These inventory life values indicate a need for national forest free-use wood policy changes.

Energy Budgets

Energy budgets were developed to determine whether free-use wood harvesters netted energy gains or energy losses by harvesting and burning fuelwood. The Btu's⁷ were calculated for the amounts of gasoline and oil used in harvesting the wood and the amounts of energy used in manufacturing the vehicles and equipment used in harvesting the wood, all compared with the amounts

of Btu's received in burning the wood. Adjustments were made for the different species of wood burned in the different areas, and the proportions of wood used in the two major types of burning units (fireplaces and stoves) in the different areas. It was assumed that stoves had an overall efficiency of 52.5 percent and fireplaces had an efficiency of 14.1 percent, based on proportions of heat-saving devices reported in New Mexico homes. Efficiencies were reported as ratios of energy used in energy received.

Those harvesters who had access to wood nearby—traveling less than 15 miles round-trip—realized an energy bonanza in burning wood, getting back 6.3 Btu's of usable heat energy to every Btu they spent in harvesting wood (Table 8). Those who traveled 70 miles or more round-trip, realized only 1.37 Btu's of usable heat for each Btu they expended.

Statewide, little usable heat energy was realized when wood was burned in fireplaces—a ratio of 1.01 Btu's received for every Btu expended (Table 9). If wood were burned in stoves, how-

TABLE 8
RATIO OF ENERGY RECEIVED BASED ON ENERGY
EXPENDED BY CATEGORIES OF ROUND-TRIP
DISTANCES TRAVELLED, NEW MEXICO
1977-78 SEASON

Round-Trip Distance Category (miles)	Ratio of Energy Expended to Received (ratio)
Less than 15	1 : 6.30
15 miles to less than 70	1 : 3.06
70 miles or more	1 : 1.37

ever, harvesters got 3.98 units of usable heat energy for every unit expended. In the Northern Border area, 3.29 units were received from burning wood in a combination of fireplaces and stoves for every unit expended, while in the Southwest and North-Central areas, harvesters got 2.55 and 2.23 units back for every unit expended, respectively. Only oak wood consistently yielded usable heat energy above the cost of harvest, regardless of kind of burning unit used and area of the state in which it was burned.

TABLE 9
RATIO OF ENERGY RECEIVED FROM BURNING WOOD BASED ON ENERGY USED IN HARVESTING
WOOD BY SPECIES OF WOOD, HOME AREA AND TYPE OF BURNING UNIT, NEW MEXICO
1977-78 SEASON

Area and Burning Unit	Species of Wood Burned					All Species
	Pinyon	Juniper	Ponderosa Pine (ratio of energy received)	Oak	Other	
Northern Border:						
Fireplaces	1.36	1.23	1.15	2.04	1.32	1.31
Stoves	4.82	4.36	1.04	7.19	4.62	4.90
All Burners	3.31	2.29	1.06	4.95	3.21	3.29
North-Central:						
Fireplaces	1.07	.97	.91	1.62	1.04	1.01
Stoves	4.27	3.83	3.58	6.39	4.09	3.99
All Burners	2.39	2.14	2.00	3.57	2.29	2.23
Central:						
Fireplaces	.75	.68	.63	1.13	.72	.72
Stoves	4.90	2.67	2.49	4.07	2.60	3.53
All Burners	1.73	1.35	1.26	2.12	1.36	1.53
Southeast:						
Fireplaces	.96	.87	.81	1.45	.93	.94
Stoves	3.50	3.16	6.30	5.27	.53	2.87
All Burners	1.45	1.31	1.36	2.17	.69	1.36
Southwest:						
Fireplaces	.97	1.36	1.36	1.45	.31	1.28
Stoves	3.55	3.21	3.01	5.38	1.21	3.56
All Burners	2.24	2.47	2.37	3.37	.75	2.55
Total State						
Fireplaces	--	--	--	--	--	1.01
Stoves	--	--	--	--	--	3.98
All Burners	--	--	--	--	--	2.23

Some ratios appear unreasonable when compared with others. For example, the ratio of 6.30 for ponderosa pine when burned in stoves in the Southeast area is much higher than for this same species in any other area. This ratio is also much higher than that for ponderosa pine when burned in fireplaces in the same area. Fuelwood harvesters of ponderosa pine for stove burning in the Southeast traveled very short distances and tended to live either in or adjacent to the Lincoln National Forest.

People burn wood in fireplaces not only for heat but also for the recreational experience of the family gathering wood and the esthetics of the sight, sound, smell, and prestige of having wood burning in an open fireplace. Energy budgets and ratios ignore these esthetic values. The esthetic value may be estimated as the difference between the heat value and the retail price of wood. Based on heat values of wood and natural gas and assuming comparable efficiencies in burning units for wood and natural gas as well as a natural gas retail price of \$3.60 per 1,000 cubic feet, a cord of pinyon has a heat value of \$82, compared with \$74 for juniper, \$69 for ponderosa pine, \$123 for oak, and \$79 for miscellaneous other woods. At 1979 retail prices, only oak is a good buy and only if the burning unit has an efficiency rating comparable with that of gas furnaces. Gas furnaces have efficiencies that average about 56 percent, while fireplaces with accessories average about 14 percent; gas furnaces are about four times more efficient than fireplaces. Consequently, the comparable values of wood in fireplaces, based on the value of natural gas in gas furnaces, would be \$20.50 per cord for pinyon, \$18.50 for juniper, \$17.25 for ponderosa pine, \$30.75 for oak, and \$19.75 for other woods. With wood selling at a retail price from \$75 to \$105 per cord, the difference of about \$45 to \$85 per cord, depending on species of wood and retail price, can be regarded as the esthetic value of wood burned in fireplaces in New Mexico in 1979.

Policy Alternatives

Some areas of the state are going to exhaust their supplies of fuelwood in less than 15 years unless fuelwood supplies can be developed on

lands other than national forests. This means that some sort of restriction or rationing procedure will be necessary for national forest fuelwood, either now to avoid the situation, or later to accommodate the situation. Rationing alternatives are numerous and include reservation, first come-first served, permit user charges, entrance fees, equipment restrictions, seasonal restrictions, species restrictions, life forms (e.g., dead and down), maximum or minimum access distances, quantity limit, seasonal restrictions because of fire conditions, access restrictions, and miscellaneous welfare considerations. Some of these alternatives will have obvious effects on both supplies of particular fuelwood species in particular locations and on fuelwood harvesters. The Forest Service in New Mexico currently uses a combination of the above, including first come-first serve, life form, equipment restrictions, and quantity limits (10 cords). Individuals can harvest up to 10 cords of dead and down wood in designated areas, provided their chain saw has an exhaust spark arrester on it.

An obvious rationing policy is to reduce the amount to be harvested by one household. Only 50 of 569 harvesters actually harvested 10 cords or more in 1977-78, and half of them were from the Northern Border area.

Sale of fuelwood is another strategy currently being used by the Bureau of Land Management. In areas in which the supply is critically short and huge quantities are being demanded, such as California, wood is being allocated by a raffle system.

Giving priority in a particular area to one kind of harvester, e.g., local residents who use wood for an essential activity such as cooking, may be accepted in some areas of New Mexico and resisted in others. A compromise could be combinations of a wide range of rationing alternatives, with the five national forests operating in concert with each other. Part of the supply could be reserved for local harvesters and part for non-locals. Larger quantities could be permitted for stove use. Fees could be charged for those not meeting free-use criteria. Species not in heavy demand could be made available to non-locals in the more accessible areas. Or weekend versus weekday harvesting could help to reduce conflicts by separating metropolitan harvesters with fireplaces

(tending to weekend harvest activities) from rural harvesters with stoves (tending toward weekday harvest activities).

Another alternative is to increase accessibility by building more roads or opening other roads to fuelwood harvesting. This alternative runs counter to present policies of reducing road mileages on national forests by abandoning rather than building more roads.

In order to implement flexible and feasible management systems, a comprehensive inventory of present supplies of fuelwood by species and locations would be recommended, preferably for areas as small as ranger districts. Only regionwide or statewide estimates are currently available for the key factors in estimating fuelwood supplies, e.g., the percentage of accessible or dead and down wood. Ideally, each ranger district should have an annual running inventory of available fuelwood supplies, by species and location. If the demand were heavy in one district, such as in the Northern Border area and the Carson National Forest, harvesters could be directed to a district in which quantities demanded were less than annual accumulations, such as in the Southwest area and the Gila National Forest. A transportation model analysis could indicate the locations and destinations requiring the fewest miles of travel. Non-locals could shift more readily than locals because of the shorter distances required for the former to make the shift. For example, wood harvesters from the Central area would travel less distance than harvesters from the Northern Border area if harvesting were shifted from the Carson National Forest to the Gila National Forest.

If energy-saving becomes a pervasive national policy, restricting use of fireplaces in New Mexico might be a consideration. Even with a 14.5 percent efficiency factor for fireplaces, which is high for fireplaces without some heat enhancing acces-

sories, these harvesters are only breaking even on energy spent versus energy received. Therefore, given a national energy-saving policy, individuals who are harvesting wood to be burned in fireplaces could be denied free-use permits.

The trend appears to be toward decreased rather than increased supplies. On the demand side, the almost 100 percent increase in quantities harvested from 1972-73 to 1977-78 is expected to moderate as supply conditions become less favorable for fuelwood harvesters. Further study is needed to determine if these events are happening on schedule.

FOOTNOTES

1. Journal article 746, Agricultural Experiment Station, New Mexico State University, Las Cruces, New Mexico 88003.
2. Letter from Mark A. Johannesen, Director of Timber Management, Region 3, Forest Service, Albuquerque, New Mexico, November 21, 1978.
3. Personal interviews were made of a randomly-selected sample of those not responding. There was no statistically significant difference between the mail response and the non-response at levels of significance ranging between .001 and .40.
4. The energy model, as well as a more detailed description of fuelwood harvesting characteristics, will be included in a forthcoming Agricultural Experiment Station research report.
5. North-Central harvesters reported 46 percent of their stoves used for cooking or the heating and cooking combination.
6. An exception was the Central area harvester, who spent twice as much time in travel as in unloading, stacking and splitting.
7. British thermal units, or the amount of energy needed to raise the temperature of one pound of water by 1° F. One Btu equals 252 calories. One gallon of regular gasoline is equal to 124,000 Btu's. One cord of pinyon wood is equal to 24.5 million Btu's if the wood is burned with 100 percent efficiency.

Appendix A

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Box 3169/Las Cruces, New Mexico 88003
Telephone (505) 646-3215



5 June 1978

Dear Firewood User:

Looking for firewood? So are we! The use of firewood in New Mexico has been skyrocketing in the last few years. The Forest Service tells us that they are running out in some areas.

We need your help! With information on your wood use, we will be able to determine how much and where wood is being cut, and how much energy is being saved by burning firewood. The enclosed questionnaire has been designed to provide the basic information to answer these questions.

Your cooperation is needed and it is voluntary. We have placed an identification number on the questionnaire, however, once the questionnaire is returned to us the number will be removed. All responses are combined for statistical analysis.

If you have not already received a questionnaire from us and filled it out, please put your completed questionnaire in the enclosed self-addressed envelope and drop it in the mail. If you want the results of our study, be sure to check the appropriate blank in the questionnaire. We will check that item first and make a list before identification numbers are removed.

For the convenience of Spanish-speaking persons, the reverse side of the questionnaire is in Spanish. Please answer the questions either in English or Spanish.

Thank you for your cooperation.

Sincerely,

James R. Gray
James R. Gray
Professor

Mary A. Bray
Mary A. Bray
Graduate Research Assistant

Encl.

Spanish Questionnaire Available Upon Request

NEW MEXICO STATE UNIVERSITY

Department of Agricultural Economics and Agricultural Business

FUELWOOD QUESTIONNAIRE - 1978

WOOD QUANTITIES AND SPECIES

1. How many cords of wood did you gather (harvest from the forest) over the twelve-month period of about April 1, 1977 to March 30, 1978?
 _____ Cords. (A cord is about two $\frac{1}{2}$ -ton pickup truck loads, with each load of wood piled even with the top of the bed and weighing about 1,100 pounds--when the cord of wood is stacked, it measures 4 feet high, 4 feet wide and 8 feet long).

2. How much of the wood gathered was of the following species?

Pinyon Pine	_____	Cords
Juniper	_____	Cords
Ponderosa Pine or Fir	_____	Cords
Oak	_____	Cords
Fruit Wood	_____	Cords
Other (Identify) _____	_____	Cords

TRANSPORTATION

3. How many trips did you make over the April 1977 - March 1978 period to gather wood? _____ Trips.
4. How much wood did you haul in a typical trip? _____ Cords.
5. In what city or town is your home located or near? _____.
6. In what county of New Mexico did you gather most or all of the wood over the twelve-month period? _____ County.
7. What was the nearest town or village to the place where you gathered this wood? _____
8. What was the usual round-trip mileage driven on a typical trip to gather wood? _____ Miles.

9. For the wood harvested over the twelve-month period, about what percent was harvested from the following ownerships?

National Forest Lands	_____	%
Bureau of Land Management	_____	%
State Lands	_____	%
Privately-owned Lands	_____	%
Other (Specify) _____	_____	%
TOTAL	100	%

TIME SPENT ON GATHERING WOOD

10. On a typical trip to gather wood, about how much time was spent traveling to the wood area and back to your home? _____ Hours.
11. On a typical trip to gather wood, how much time was spent in the following activities:
- | | | |
|--|-------|--------|
| Sawing or cutting and loading wood | _____ | Hours. |
| Unloading, splitting and stacking wood | _____ | Hours. |
12. On a typical trip to gather wood, how much time was spent on other activities, including recreation? _____ Hours.
13. On a typical trip to gather wood, how many people, including yourself, actually helped in harvesting wood? _____ People.

INVESTMENTS

14. If you own your own chainsaw(s), how much did you pay for it? \$ _____. How old is it? _____ Years.
15. About how much have you invested in other wood harvesting equipment (gasoline containers, sharpening equipment, axes, shovels, etc.)? \$ _____
16. If you own a trailer that you use to haul wood, what did you pay for it? \$ _____. How old is it? _____ Years. What percent of its annual use was for hauling wood? _____ %.
17. If you own a truck or pickup that you use to haul wood, what did you pay for it? \$ _____. How old is it? _____ Years. What percent of its annual use was for hauling wood? _____ %.

18. If you own any other kinds of equipment used almost exclusively for gathering wood or preparing it for use, identify them and indicate their costs:

<u>Kind of equipment</u>	<u>Cost</u>
_____	\$ _____
_____	\$ _____
_____	\$ _____

HARVEST COSTS

19. If you rented any of the above equipment, indicate the kind of equipment, number of trips used, and rental cost per trip in the following table:

<u>Kind of Equipment</u>	<u>Number of Trips</u>	<u>Rental Cost Per Trip</u>
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____

20. If you used your own equipment, or rented equipment for which fuel was used, indicate amounts of fuel used on a typical trip for:

Vehicles _____ Gallons of gasoline.

Chainsaws _____ Gallons of gasoline.

Other equipment _____ Gallons of gasoline.

Other lubricants or oils _____ Quarts, or _____ Pounds.

21. If a permit fee was paid, what was the total amount paid during the twelve-month period of April 1, 1977 to March 31, 1978? \$ _____
22. If labor was hired, what was the total amount paid during this period, either in dollars and/or wood? \$ _____, or _____ Cords.

ESTIMATED CHANGES IN CONSUMPTION

23. In 1972 (before the energy concern), about how many cords of wood did you burn over a twelve-month period? _____ Cords.

24. In 1980, about how much wood do you expect to burn over a twelve-month period if:

The same wood supply conditions and regulations exist as now?
_____ Cords.

Energy prices (gasoline, natural gas, butane, and electricity) continue to increase over the next 2-3 years as they have in the past 2-3 years? _____ Cords.

Wood supplies decline in nearby areas and supplies are only available at twice the distance you now travel? _____ Cords.

FUELWOOD PRICES

25. Did you purchase fuelwood from wood dealers, truckers or peddlers, during the twelve-month period of April 1, 1977 to March 31, 1978? Yes _____, No _____. If yes, please answer the following questions; if no, go on to question 26.

Town in which woodyard or dealer is located _____ Town.

Quantity of wood purchased _____ Cords.

Major species of wood purchased and price paid per cord:

<u>Species of Wood</u>	<u>Price Per Cord</u>
Pinyon Pine _____ Cords	\$ _____ Cord
Juniper _____ Cords	\$ _____ Cord
Ponderosa Pine or Fir _____ Cords	\$ _____ Cord
Fruit Wood _____ Cords	\$ _____ Cord
Other (Specify) _____, _____ Cords	\$ _____ Cord.

Did the price of the wood include delivery? _____ Yes, _____ No.

Did the price of wood include stacking? _____ Yes, _____ No.

WOOD BURNING EQUIPMENT IN YOUR HOME

26. Describe your home in terms of the following (check appropriate blank):

Type of Construction: Adobe _____, Wood Frame _____, Brick Veneer _____,
Cinder Block _____, Other (Identify) _____.

Major Heating Source: Natural Gas _____, Oil _____, Electricity _____,
Butane _____, Wood _____, Other (Identify) _____.

Storm doors on home? _____ Yes, _____ No.

Storm windows on home? _____ Yes, _____ No.

Insulation in ceiling? _____ Yes, _____ No.

Insulation in walls? _____ Yes, _____ No.

Describe any other heat saving features of your home (for example, thermal windows, solar equipment, etc.) _____

Estimate of the total square feet of heated area in your home.
_____ Square Feet.

27. Do you have a fireplace(s) in your home? _____ Yes, _____ No.
If yes, complete the following questions; if no, go on to question 28.

Indicate number of fireplaces in your home _____.

Describe fireplace(s) in terms of:

Type (such as regular wall, freestanding, corner, between rooms)

Dimensions of fireplace opening: Height _____, Width _____.

Does fireplace(s) have damper(s)? _____ Yes, _____ No.

Does your fireplace(s) have any other heat-saving features (for example, air circulation grates, glass doors, etc.) _____ Yes, _____ No.
If yes, please specify. _____

About how much wood did you burn in your fireplace(s) from about April 1, 1977 to March 31, 1978? _____ Cords.

28. Do you have a woodburning stove(s) in your home? _____ Yes, _____ No.

If yes, indicate size of stove (width of firebox) _____ Inches.

Indicate major use of stove(s). Heating _____ Cooking _____ Other _____.

About how much wood did you burn in your stove(s) over the last twelve-month period? _____ Cords.

SOCIO-ECONOMIC CHARACTERISTICS

29. What is the number and ages of adults living in your home?

Number _____ Ages _____, _____, _____, _____, _____, _____.

30. List the ages of children living in your home. __, __, __, __, __, __.

31. What are the occupations of the adults living in your home?

32. Indicate the category which represents your total household income in 1977, before taxes.

Less than \$5,000	_____	\$20,000 - \$24,999	_____
\$5,000 - \$9,999	_____	\$25,000 - \$29,999	_____
\$10,000 - \$14,999	_____	\$30,000 - \$39,999	_____
\$15,000 - \$19,999	_____	\$40,000 & over	_____

33. Would you like a copy of the results of our research? ____ Yes, ____ No.

THANK YOU FOR YOUR COOPERATION

_____. I.D.

The Housing Market in Albuquerque

ILENE KELFER

[Ilene Kelfer is an economist at the Bureau of Business and Economic Research. She will receive her master's degree in Economics from the University of Texas at Austin.]

Introduction

Located in the nation's Sunbelt, people have long been drawn to New Mexico's largest city and trade center because of its temperate, dry climate and nearby scenic beauty. In response to this immigration and the natural increase of population, the number of housing units in Albuquerque has grown over 33 percent since 1970. (See Table 1.) However, rather than steady and smooth, activity in the housing market has been marked by cycles of often feverish expansion and sometimes abrupt decline. The national economy currently wavers on the brink of recession, and its housing market has entered a downturn, primarily due to unavailability of mortgage monies and high interest rates. The purpose of this article is to examine the degree to which the Albuquerque housing market has been affected by current economic conditions. First economic and demographic factors which affect housing markets will be discussed.

Then recent data for the Albuquerque housing market will be presented, and, finally, this data will be compared to economic activity during the 1974-75 Albuquerque housing recession.

Factors Affecting Housing Markets

The demand for housing units is derived from the total population, from its age distribution, and from the way in which the population groups itself into household units. Thus, a large increase in the population aged 18 to 34 in recent years has led to a large increase in housing demand. In particular, as people move into the group aged 25 to 34, they will raise the demand for owner-occupancy of a single family dwelling. Also, the propensity of the population to group itself into housing units affects the demand for housing. In the 1970s this tendency expanded because not only are there more persons of household headship age, but also more persons are opting to form

TABLE 1

NUMBER OF DWELLING UNITS BY TYPE IN ALBUQUERQUE

	1970	1978	1979	Percent Change 1978-79	Percent Change 1970-79
Single family units ¹	76,921	86,091	92,189	7.1	19.8
Multifamily units	21,570	35,557	39,007	9.7	80.8
Total units	98,491	121,648	131,196	7.9	33.2

¹ Includes mobile homes.

Source: U.S. Department of Commerce, Bureau of the Census, 1970 Census of Housing, 1970; 1978 and 1979: Compiled by the City of Albuquerque for the Albuquerque Industrial Development Service (AIDS).

single individual households when they previously would have been members of a family household. These single individual households result from increased personal income permitting young persons to set up their own household, the delay or dissolution of marriage, and the reference of elderly surviving spouses to maintain their own residences. Looking at available data, the population of the Albuquerque SMSA¹ has grown substantially since 1972 (see Table 2). Between 1975 and 1978, population grew at an average annual rate of 1.8 percent. Yet, the number of households and of persons between the ages of 25 and 34 years² grew at an annual average rates of 3.6 and 6.5 percent, respectively. These demographic data explain the remarkable continued demand for housing that Albuquerque has witnessed in its recent past.

Another equally important aspect which determines the demand for housing in a particular area is the household's decision to buy or rent. Several economic considerations affect the decision to buy: the cost of home ownership versus renting, the purchase price of the home, the interest rate on the mortgage and the availability of mortgage credit, property taxes, and the costs of maintenance and repair. In addition, the level of real personal income in a household affects demand for owner occupancy. (Personal income is the amount of income that a household takes home

after taxes are deducted. Real personal income is personal income which has been adjusted for inflation.) The effects of these economic factors on the housing market in Albuquerque will be discussed in the following sections.

Recent Trends in the Albuquerque Housing Market

Since late 1978 the Albuquerque housing market has shown signs of weakening due to increasing interest rates and the state's usury ceiling, which is currently set at 10 percent for secured loans. The conventional mortgage interest rate was 9 percent in early 1979 in Albuquerque. By summer it had reached between 10 and 10.5 percent. After the Federal Reserve moved to hold down inflation by tightening credit, the interest rate moved to over 13 percent in December, 1979.

New Mexico's usury law was interpreted, however, to permit the sale of mortgages made at rates greater than 10 percent to a secondary mortgage market. The existence of this secondary market allows local mortgage lenders needing cash to sell some of their mortgage holdings to such organizations as the Federal National Mortgage Association (FNMA). FNMA is not simply a market maker, but has become a net buyer of mortgages in periods of tight money or when the housing market is depressed. One problem that arises with FNMA loans is meeting its requirements. Until

TABLE 2
DEMOGRAPHIC DATA FOR THE ALBUQUERQUE SMSA¹

	1973	1974	1975	1976	1977	1978	1979 ²
Population	375,200	380,600	385,400	393,100	401,700	408,300 ^p	na
Percent change	4.6	1.4	1.3	2.0	2.2	1.7	
Nonagricultural Employment	139,900	144,000	146,700	155,600	164,900	177,800	189,700
Percent change	6.3	2.9	1.9	6.1	6.0	7.8	6.9
Number of households	117,300	127,400	128,400	131,500	141,600	146,600	na
Percent change	7.1	8.6	0.8	2.4	7.7	3.5	
Median household disposable income ³	9,188	10,626	11,310	11,989	13,277	14,699	na
Percent change	8.5	15.6	6.4	6.0	10.7	10.7	

na Not available.

p Preliminary.

¹ Bernalillo and Sandoval Counties.

² Employment figures are preliminary for October, 1979.

³ Defined as personal income less tax, nontax payments, contributions for social insurance and compensation paid to military and diplomatic personnel overseas.

Source: U.S. Department of Commerce, Bureau of Census, *Current Population Reports*, Series P-26; New Mexico Employment Security Department, *Albuquerque Estimated Employment*; Sales and Marketing Management, *Survey of Buying Power*.

recently the maximum loan limit was \$75,000. This contributed to a decline in the sale of expensive homes except for those households able to make substantial down payments. Nevertheless, despite the state's usury ceiling, the secondary market has made more mortgage money available; but the interest rate on these monies currently tops 13 percent. On the other hand, the state's usury law has reduced the amount of money that savings institutions will make available for mortgages. Savings institutions are now paying interest rates on large certificates of deposit equal to the rate paid on six month U.S. Treasury bills. However, because it is uneconomical for them to make mortgages below the usury ceiling, savings institutions have been forced to invest more of their funds into higher interest yielding instruments located out of state where usury limits do not apply.

Responding to high interest rates and somewhat lessened availability of mortgage money from savings institutions, the City of Albuquerque in April, 1979, made available \$78.1 million in mortgage money to middle income households. Households earning less than \$24,000 per year could borrow up to \$52,000 for a single family

residence at an interest rate of 8.25 percent. The following August, the New Mexico Mortgage Finance Authority made \$150 million available for home mortgages to households earning less than \$21,000 per year. The state charged an interest rate of 7.75 percent. It is conservatively estimated that these two programs filtered at least \$100 million in mortgages into the Albuquerque housing market in 1979, boosting the total value of mortgages filed by over 10 percent.

But despite the aid of the secondary market and inexpensive state and city monies, a chilling effect in Albuquerque's housing market has been observed. The number of residential units sold, residential building permits issued, and mortgages filed show signs of weakening. In the last half of 1978, the number of residential units sold demonstrated negative growth during three of the last six months (see Table 3). The last months of 1979 showed precipitous decline compared to the same months in 1978. The only months in 1979 which showed year-over-year monthly growth were generally those during which the City of Albuquerque and the New Mexico Mortgage Finance Authority made mortgage monies available at low interest rates.

TABLE 3
NUMBER OF RESIDENTIAL UNITS SOLD, MULTIPLE LISTING

	<u>1978</u>	<u>Percent Change</u>	<u>1979</u>	<u>Percent Change</u>
January	541	36.3	499	- 7.8
February	522	9.2	594	13.6
March	680	13.3	744	9.4
April	522	- 2.8	595	14.0
May	633	18.1	614	- 3.0
June	643	13.2	681	5.9
July	651	7.2	619	- 4.9
August	693	- 2.4	756	9.1
September	548	4.2	531	3.1
October	584	18.4	576	- 1.4
November	513	- 2.1	388	-24.4
December	355	- 1.4	263	-25.9
Annual Total	6,885	8.7	6,860	- 0.4

Source: Albuquerque Board of Realtors, Multiple Listing Report.

The number of building permits issued and mortgages filed also began to show signs of weakening as 1978 ended. The issuance of building permits in Albuquerque showed negative growth during five of the last seven months of 1978 (see Table 4). Two of those months declined more than 40 percent each. In 1979, activity consistently weakened, as only four months of the year showed positive growth. The growth in building permits during June, July and August again must be attributed to mortgage monies made available by the City of Albuquerque during the spring. And despite this inexpensive money, activity continued to decline throughout the end of the year.

As noted previously, the conventional mortgage interest rate began to increase significantly during 1978. In response to this, the number of mortgages filed in Bernalillo County also began to decline, reflecting again the current weakness in the Albuquerque housing market. Data for the last month of 1978 signaled the end of robust expansion occurring in the previous months of the year (see Table 5). In 1979 mortgage activity

declined significantly, showing negative growth during ten months of the year. Overall growth for the year was down by 6.8 percent.

The data clearly indicate that the housing market in Albuquerque has recently begun to weaken after years of extraordinary growth. Despite the growing number of households desiring owner occupancy of a single family dwelling in the Albuquerque area, the demand for that type of housing in the recent past has declined for several reasons. Rising mortgage interest rates, coupled with appreciating home sale prices, are a major reason for the decline. The average sales price of a home in Albuquerque grew by more than 20 percent in 1978 and by 16.4 percent in 1979 (see Table 6). Increasing home prices simply translate into larger mortgages for buyers. And buyers currently must pay higher financing costs, as well. Table 7 illustrates the effect of rising interest rates on monthly payments for a \$50,000 thirty-year mortgage. As the interest rate increases from 9.5 percent to 13.5 percent, the household's monthly payment grows by nearly 37 percent,

TABLE 4
BUILDING PERMITS ISSUED IN ALBUQUERQUE

	1978				1979			
	Single Family Units	Multi- Family Units	Total Units	Total Percent Change	Single Family Units	Multi- Family Units	Total Units	Total Percent Change
January	317	143	460	1.5	209	98	307	-33.3
February	322	93	415	12.2	176	120	296	-28.7
March	350	252	602	-45.1	463	147	610	1.3
April	408	178	586	7.5	316	51	367	-37.4
May	377	391	768	0.7	290	271	561	-27.0
June	304	121	425	-41.1	213	532	745	75.3
July	335	181	516	-0.8	206	494	700	35.7
August	398	94	492	-14.3	215	353	568	15.4
September	272	443	715	19.4	121	389	510	-28.7
October	239	97	336	-12.0	173	64	237	-29.5
November	285	135	420	-41.9	129	226	355	-15.5
December	334	103	437	2.3	68	26	94	-78.5
Annual Total	3,941	2,231	6,172	-14.0	2,580	2,771	5,351	-13.3

Source: City of Albuquerque, Municipal Development Department, Monthly Statistical Series.

TABLE 5

MORTGAGES FILED BY MAJOR LENDING INSTITUTIONS
IN BERNALILLO COUNTY

	<u>1978</u>	<u>Percent Change</u>	<u>1979</u>	<u>Percent Change</u>
January	1,110	41.4	1,072	- 3.4
February	1,031	25.9	1,006	- 2.4
March	1,369	18.0	1,284	- 6.2
April	1,252	4.9	1,512	20.8
May	1,416	15.6	1,490	5.2
June	1,463	17.6	1,268	-13.3
July	1,237	4.2	1,184	- 4.3
August	1,454	3.9	1,387	- 4.6
September	1,212	0.2	1,099	- 9.3
October	1,333	11.8	1,224	- 8.2
November	1,258	11.1	890	-29.3
December	1,201	- 0.9	888	-26.1
Annual Total	15,348	11.4	14,304	- 6.8

Source: New Mexico Title Company, Mortgages in Bernalillo County, selected months.

TABLE 6

AVERAGE SALE PRICE OF AN ALBUQUERQUE HOME

	<u>1978</u>	<u>Percent Change</u>	<u>1979</u>	<u>Percent Change</u>
January	45,676	19.0	52,147	14.2
February	45,917	17.8	53,281	16.0
March	48,020	20.2	55,265	15.1
April	48,476	15.3	59,833	23.4
May	47,407	14.8	60,586	27.8
June	51,430	22.6	58,881	14.5
July	52,088	18.0	59,785	14.8
August	52,573	28.0	59,407	13.0
September	52,126	22.5	61,176	17.4
October	51,758	25.9	58,750	13.5
November	55,337	23.5	66,082	19.4
December	53,853	17.8	58,453	8.5
Annual Average	50,388	22.7	58,637	16.4

Source: Albuquerque Board of Realtors, Multiple Listing Report.

TABLE 7

EFFECT OF RISING INTEREST RATES ON
MONTHLY PAYMENTS ON A \$50,000
MORTGAGE¹

Interest Rates	Monthly Payments	Take Home Income Required to Qualify for Mortgage ²
9.5	\$420	\$1,401
10.5	457	1,525
11.5	495	1,650
12.5	534	1,779
13.5	573	1,909

1 For thirty years.

2 Assuming that to qualify for a mortgage, monthly payments may not exceed 30 percent of total take home income.

from \$420 to \$573. In order to qualify for a loan, lending institutions require that the monthly payment not exceed a certain percentage of the household's consumable income. If one assumes that this requirement is 30 percent, for example, a household's qualifying monthly income would have to grow from \$1,401 to \$1,909. With the current rate of inflation, it seems unlikely in the near future that incomes of many prospective buyers will grow sufficiently to qualify for home loans if interest rates remain high.

How Bad is the Current Downturn in the Housing Market in Albuquerque?

Based on recent data, the current housing market in Albuquerque appears to be somewhat weakened. However, a look at historical data indicates that the current slowdown is less severe than the Albuquerque housing recession of 1974-75. While growth of residential units sold in Albuquerque in 1979 demonstrated dramatic decline in certain months, total growth for the year was almost flat, at -0.4 percent (see Graph 1). Historical data show that growth of home sales in 1974 fell to only 1.5 percent. The total number of building permits issued in Albuquerque declined 13.3 percent in 1979, following a 14.0 percent decline during the previous year. However, in 1973 and 1974 growth declined 53.2 and 39.7 percent, respectively. Finally, the number of

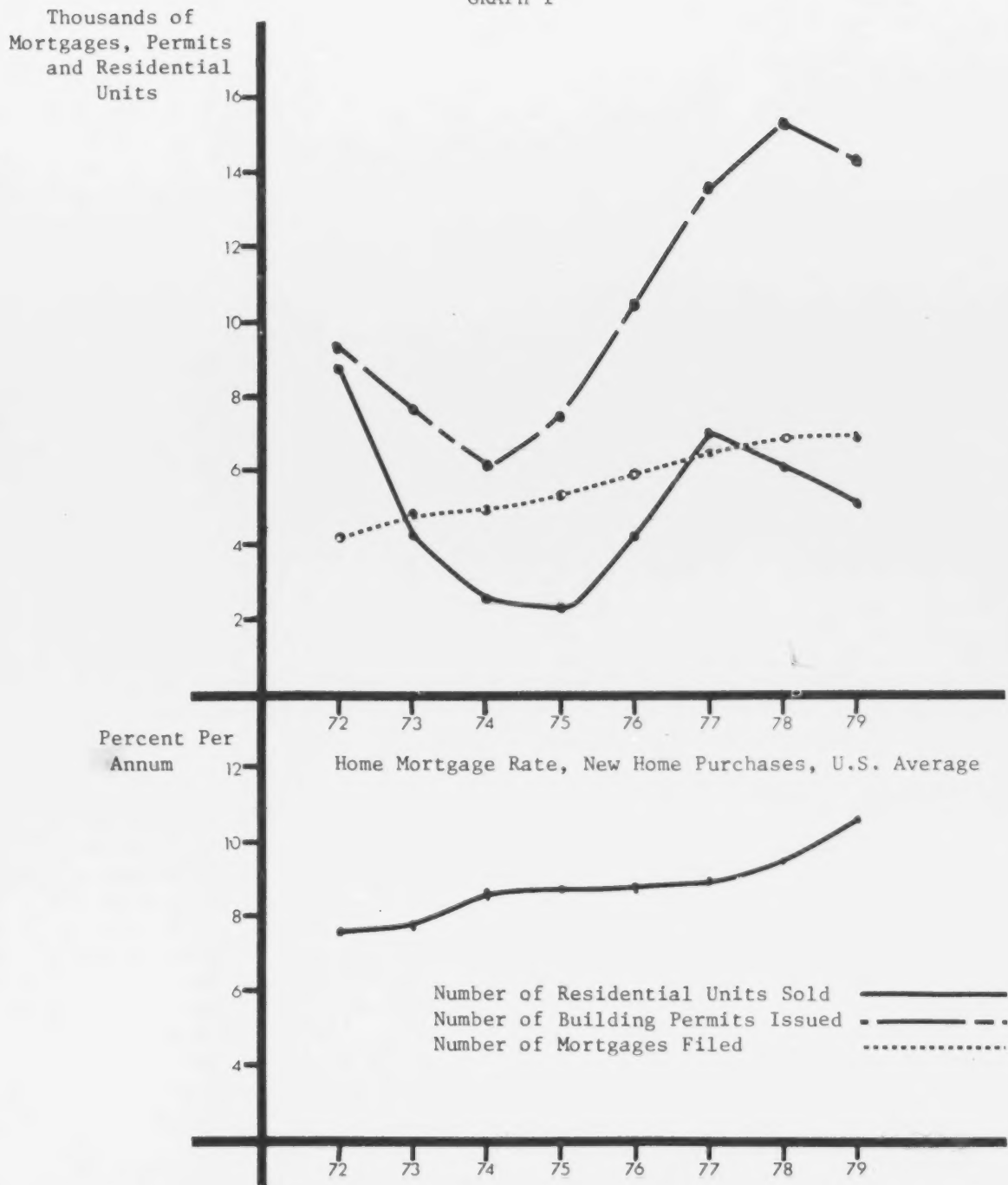
mortgages filed in 1979 fell nearly 7 percent, compared to a 1974 decline of 21 percent.

There are several reasons which explain why the current slowdown in the Albuquerque housing market has been less severe than during 1974-75. First, the policy controlling maximum interest rates payable on savings and time deposits has changed. Prior to June, 1978, the Federal Reserve's Regulation Q set strict limits, near 5 to 5.5 percent, on the interest which could be paid by commercial banks and savings institutions. During 1973 and 1974, interest rates on short-term instruments, such as six month U.S. Treasury bills, were higher than rates being paid by financial institutions (see Graph 2). The effect was a strong trend toward individual investments directly into such assets as government bonds and away from deposits at savings institutions, which create mortgages. However, this problem of funds flowing from savings institutions to higher interest, short-term instruments (or disintermediation) has not occurred during the current slowdown, despite the sharp increase in Treasury bill interest rates. In June, 1978 commercial banks, savings and loan associations and mutual savings banks were authorized by the Federal Reserve to offer money market time deposits (MMD's), whose ceiling rate is the discount rate on the most recently issued six month Treasury bill. This has tended to reduce disintermediation that would have otherwise occurred, making more funds available for mortgages at savings institutions.

The current housing market has also benefited from low cost mortgage monies made available by both the state and the City of Albuquerque. Total mortgages filed in Albuquerque in 1979 were valued at \$825 million.³ Nearly \$80 million was low interest money made available by the City of Albuquerque. It is likely that millions of the \$150 million made available by the state flowed into the Albuquerque housing market. There was no governmental assistance of this type during the 1974-75 Albuquerque housing recession.

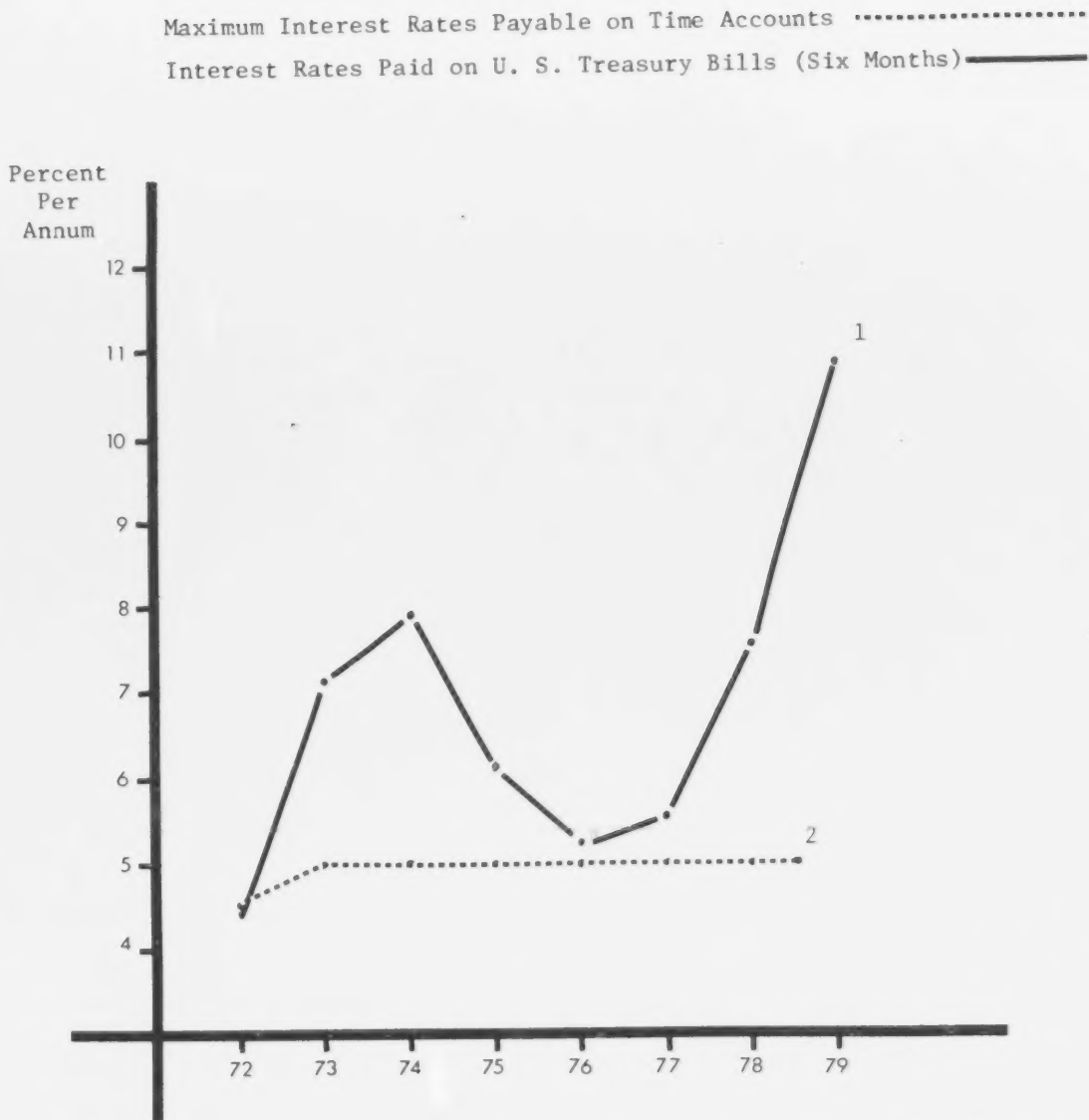
The differences between interest rate levels and the usury ceiling during the two periods suggest that the current slowdown should have been more severe than during 1974-75. But aside from the previously mentioned factors, this has not been the case due to the existence of the Federal

GRAPH I



Source: Albuquerque Board of Realtors, Multiple Listing Report; City of Albuquerque, Municipal Development Department, Monthly Statistical Report; New Mexico Title Company, Mortgages in Bernalillo County; U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, November, 1979 and Business Statistics, 1977.

GRAPH 2



1 1979 figure for Treasury bills is based on data through November only.

2 As of June, 1978 commercial banks, savings and loan associations and mutual savings banks are permitted to offer money time deposits (MMD's) whose ceiling rate is the discount rate on U.S. Treasury bills.

Source: U.S. Federal Reserve Bank, Federal Reserve Bulletin, selected months.

National Mortgage Association and other secondary markets. Therefore, while there has been a slowdown in Albuquerque's current housing market, at this point it continues to be less severe than the housing recession in Albuquerque during 1974-75.

Summary and Outlook

Since late 1978 the housing market in Albuquerque has shown signs of weakening for several reasons. First, continuing inflation at the national level has caused personal income to grow at relatively slower rates. At the same time, mortgage interest rates are at their highest recorded levels, causing monthly payments and the level of income necessary to qualify for loans to increase significantly. Sales prices of homes continue to appreciate. And because of the state's usury ceiling, some monies from savings institutions have been diverted from mortgages to higher interest investments located out of state. Recent data for Albuquerque substantiate the inability of households to purchase single-family dwellings. The number of units sold in 1979 remained essentially flat, while permits issued and mortgages filed declined significantly. However, historical data since 1972 indicate that the current decline remains less dramatic than during the 1974-75 housing recession in Albuquerque because of the relaxation of Regulation Q, the availability of low-interest state and city mortgages, and because of the services of the Federal National Mortgage Association.

There are several factors which may affect the outlook for the Albuquerque housing market. Both the future of the state's usury ceiling and the continued availability of low-interest state and city mortgage money are under question. The federal government recently preempted usury ceilings in all states for 90 days beginning January 1, 1980. However, the constitutionality of such a measure remains unclear. In addition, the 1980

New Mexico legislature will consider several proposals to increase the ceiling on usury. If the ceiling is raised or abolished, it could significantly facilitate the obtainment of mortgages in Albuquerque when interest rates are high. On the other hand, the availability of low interest mortgage monies has come under fire from the U.S. Congress, which claims that the federal government sustains substantial loss of revenues due state and local government mortgage programs. At this time Congress has not taken final action, but if low interest mortgages are disallowed, housing in Albuquerque will not fare as well.

Finally, the national outlook will affect prospects for the Albuquerque housing market. Many analysts expect the anticipated national recession to last about three quarters, with recovery starting in the last half of 1980. By that time, inflation and interest rates may have leveled or even declined. With the stabilization of mortgage interest rates, and perhaps an increase in the state's usury ceiling, more conventional mortgage money will become available in the city. Also, declining rates of inflation would likely create more real income for households. As previously mentioned, the number of persons in Albuquerque moving into the 25 to 34 year age group has been increasing at phenomenal rates in recent years due to the post-World War II baby boom. If the pent-up demand for housing in this age group meets with greater mortgage availability and lower interest rates, the Albuquerque housing market can expect a significant increase in activity.

FOOTNOTES

1. Includes Bernalillo and Sandoval Counties.
2. Lynn Wombold, *Estimates and Projection of the Population of New Mexico by County, 1975-1990*, Bureau of Business and Economic Research, 1979, p. 22, 44.
3. New Mexico Title Company, *Mortgages in Bernalillo County*.

Current Economic Developments in New Mexico

MONTHLY SUMMARY

ILENE KELFER

The U.S. economy still fails to give clear signals that the widely expected recession is about to begin, but there are signs that economic expansion is losing its impetus. Although the economy has slowed, it is demonstrating remarkable stability. The preliminary figure for growth of real GNP in the fourth quarter of 1979 was 1.5 percent, following over 3 percent growth in the third quarter. The nation's unemployment rate in December was 5.9 percent (SA), up slightly from 5.8 percent (SA) in November and unchanged from October's rate. At the same time, retail sales in December grew 1.1 percent (SA) following a sharply downward revised increase of 0.7 percent in November. Most of the sales gains for the past two months are accounted for by price increases, rather than increases in unit sales. Some analysts observe that, with the savings rate at an extraordinarily low level, consumers are financing their buying with savings, a pattern which is not expected to continue.

However, other economists believe that the savings rate may not be as low as reported due to appreciation of home prices in recent years. The current savings rate does not capture the additional income, and thus savings, which these unreported capital gains represent to the homeowner. By refinancing his home mortgage, or by obtaining a second mortgage, or by increasing his outstanding mortgage debt when selling one home and purchasing a new one, the homeowner is able to convert the unreported capital gains income into higher consumption expenditures. Therefore, actual savings in the economy is likely greater than the published figure, and personal consumption may continue at its present rate. However, while the government's latest reports do not fore-

shadow an economic slide, many economists are predicting a mild decline early this year, followed by recovery later in 1980.

The latest aggregate data for the New Mexico economy also reveal slowed, but generally stable growth. The number of persons seeking employment in October was a slight 0.2 percent (SA) greater than in September and 4.0 percent (SA) more than in October, 1978. Total employment continued its moderate growth pattern, rising 0.2 percent (SA) over the previous month. However, the number of persons unemployed showed an unexpected increase as reflected by the number of persons applying for unemployment insurance. While new unemployment insurance claims in October were 0.4 percent (SA) less than in 1978, they were 4.3 percent (SA) greater than September. The unemployment rate measured 6.0 percent (SA) in October, significantly higher than last October's 5.5 percent rate. It remained unchanged, however, from September's unemployment rate.

Figures for the individual economic sectors in the state substantiate slowed growth in certain areas. Employment in TCU, which measured 3.6 percent over October, 1978, fell significantly behind its average growth rate in 1978 of over 8 percent. Employment in the Services sector in October expanded only 1.4 percent (SA) compared to October, 1978; lodging employment fell 1.1 percent (SA). Slowed growth in lodging and Services is explained by rising gasoline prices and declining real personal income. Visits to national parks showed year-over-year monthly decline of 11.5 percent (SA). However, the Mining sector continued to lead the economy, with coal production up 8.8 percent over a year ago. The Govern-

ment sector demonstrated the greatest monthly year-over-year growth for October due almost entirely to increases in the educational field for both state and local government. After Government, the Trade sector showed the greatest gain. Employment in Wholesale Trade, numbering 22,000 jobs, grew 6.8 percent, while the 87,400 jobs in Retail Trade represented growth of 5.7 percent (SA). This seasonal expansion was, in part, in anticipation of expanding trade sales, which accompany the holiday season. Manufacturing employment continued to grow at its 1978 rate, measuring 3.8 percent (SA).

Data for the financial sector remained mixed in October. Bank debits in October were 144.1 percent (SA) for the same month in 1978. Bank time deposits rose by 13.0 percent. But bank demand deposits remained almost flat, measuring only 0.3 percent in October compared to last year, and were also nearly flat during the two previous months. The increase in time deposits and decline in demand deposits is due, in part, to the availability of new bank services which essentially permit private customers to draw checks against their savings accounts. New bank loans, an important indicator of economic growth in New Mexico, were down 13.0 percent (SA) compared to October, 1978. This decline may be explained by the lessened availability of credit due to the state's usury ceiling and increasing costs of borrowing.

As a result of tightening credit, construction activity has begun to weaken. Residential construction contracts in New Mexico in October rose 4.7 percent (SA) above September's figures. However, the reported dollar value was 3.2 percent (SA) less than a year ago. Commercial construction contracts showed the greatest loss, declining 31.8 percent below last year's figures. Only nonbuilding construction contracts showed growth in October, registering a robust increase of 53.2 percent. Nonbuilding construction includes construction of public works, e.g., sewers, roads, bridges.

In summary, the New Mexico economy has shown signs of slowed growth, mirroring activity at the national level. Employment has followed its usually seasonal fluctuation, but rates of growth in certain sectors, such as TCU and Services, are less than demonstrated in recent periods. Financial activity has been mixed, with bank loans down due to high interest rates and limits placed by the state's usury ceiling. This, in turn, has affected the construction sector, reducing activity in the residential and nonresidential sectors. The outlook for New Mexico is one of continued slow growth as long as interest and inflation rates remain high.

ECONOMIC INDICATORS

	Quarterly Averages			
	1978	1979		
	Fourth Quarter	First Quarter	Second Quarter	Third Quarter
1. GENERAL				
Civilian Labor Force ¹ (000)	534.8	525.0	544.1	554.3
Seasonally Adjusted*	534.0	538.9	540.4	545.2
Total Employment ¹ (000)	506.0	493.5	514.4	524.0
Seasonally Adjusted*	504.5	508.9	510.5	514.2
Unemployment ¹ (000)	28.8	31.6	29.7	30.3
Seasonally Adjusted*	29.6	30.0	29.9	31.0
Unemployment Rate (%)	5.4	6.0	5.5	5.5
Seasonally Adjusted*	5.5	5.6	5.5	5.7
Weekly New Unemployment Insurance Claims	1,302.7	1,436.0	1,171.7	1,114.0
Seasonally Adjusted*	1,259.3	1,236.4	1,294.1	1,231.3
Nonagricultural Wage/Salary Employment ² (000)	455.4	449.9	465.8	471.6
Seasonally Adjusted*	454.5	458.4	463.0	467.0
New Business Incorporations	201.7	237.7	240.7	na
Business Failure Liabilities (\$000)	0.0	58.0	na	na
2. AGRICULTURAL RECEIPTS				
From Livestock and Products (\$ mil.)	na	na	na	na
Seasonally Adjusted*	na	na	na	na
From Crops (\$ mil.)	na	na	na	na
Seasonally Adjusted*	na	na	na	na
3. MINING PRODUCTION				
Petroleum (000 bbls.)	6,827.3	6,454.2	6,578.6	na
Natural Gas (bil. cu. ft.)	97.9	95.7	95.4	na
Seasonally Adjusted*	96.1	93.7	96.8	na
Copper Ore (000 tons)	11.9	13.8	16.6	na
Coal Production (000 short tons)	1,053.0	1,033.3	971.0	944.0
4. CONSTRUCTION				
Residential Building Permits (\$ mil.)	20.7	24.8	30.1	25.7
Seasonally Adjusted*	24.3	24.1	26.5	25.5
Residential Construction Contracts (\$ mil.)	34.5	40.2	48.8	40.5
Seasonally Adjusted*	41.4	38.1	43.0	41.0
Nonresidential Construction Contracts (\$ mil.)	24.7	16.1	26.0	28.5
Nonbuilding Construction Contracts (\$ mil.)	17.2	18.2	15.3	26.3
5. MANUFACTURING				
Employment ² (000)	34.1	34.1	35.1	35.1
Seasonally Adjusted*	33.6	34.8	35.2	34.8
Average Weekly Hours	38.9	39.6	39.5	39.0
Seasonally Adjusted*	38.4	39.9	39.7	39.1

ECONOMIC INDICATORS (continued)

			Percentage Change				Percentage Change		
August	1979 September	October	IV 1977- IV 1978	I 1978- I 1979	II 1978- II 1979	III 1978- III 1979	Aug. 78- Aug. 79	Sep. 78- Sep. 79	Oct. 78- Oct. 79
551.4	555.7	559.1	3.5	4.3	3.6	3.3	2.9	3.6	3.9
541.8	550.2	551.5	3.5	4.4	3.6	3.3	2.9	3.6	4.0
521.6	525.2	526.9	4.9	4.7	3.8	3.3	3.0	3.5	3.4
511.4	517.4	518.6	4.9	4.7	3.8	3.3	3.0	3.5	3.5
29.8	30.5	32.2	- 15.5	- 1.0	- 0.2	2.6	2.1	5.2	12.6
30.5	32.7	32.9	- 15.6	- 1.0	- 0.3	2.7	1.9	5.1	12.6
5.4	5.5	5.8	- 18.2	- 4.7	- 2.8	- 0.5	0.0	1.9	9.4
5.6	6.0	6.0	- 18.4	- 5.1	- 3.6	- 0.5	- 1.0	1.5	8.4
1,043.0	1,043.0	1,274.0	7.4	5.8	0.7	- 2.6	- 9.3	- 6.1	- 0.1
1,144.9	1,225.6	1,277.8	7.1	5.0	0.3	- 2.9	- 9.7	- 6.1	- 0.4
470.7	474.2	473.5	6.4	5.5	4.9	4.1	3.8	4.4	4.2
465.1	470.4	471.1	6.4	5.5	4.9	4.2	3.8	4.5	4.2
na	na	na	22.7	26.9	9.4	na	na	na	na
na	na	na	-100.0	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na
na	na	na	- 6.1	- 7.7	- 5.8	na	na	na	na
na	na	na	- 1.5	- 2.8	1.1	na	na	na	na
na	na	na	- 1.3	- 2.8	1.1	na	na	na	na
16.7	na	na	- 19.1	3.8	47.1	na	52.6	na	na
1,182.0	979.0	1,243.0	20.8	3.7	- 1.2	- 12.9	- 6.8	- 8.9	8.8
26.8	22.0	na	- 3.0	- 7.9	- 1.0	- 11.1	- 13.1	- 25.4	na
26.2	22.9	na	- 3.4	-10.3	-0.5	- 11.6	- 13.6	- 25.3	na
39.6	35.7	42.6	- 14.4	7.2	9.7	- 6.1	- 20.2	2.7	- 2.6
39.4	42.7	44.7	- 13.3	7.2	9.0	- 5.8	- 19.9	3.3	- 3.2
19.1	17.0	29.5	2.0	- 1.9	84.6	64.1	16.0	51.1	-31.8
26.2	31.9	38.7	- 7.7	1.5	-58.4	6.6	- 34.1	217.0	53.2
35.2	35.3	35.5	2.5	4.9	6.6	4.3	4.5	3.8	3.8
34.7	34.9	34.8	2.5	4.9	6.5	4.4	4.6	3.8	3.8
39.2	38.9	39.2	- 3.3	- 0.7	0.6	1.5	2.1	0.8	1.6
39.5	38.7	38.7	- 3.3	- 0.8	0.6	1.5	2.1	0.8	1.5

ECONOMIC INDICATORS (continued)

	Quarterly Averages			
	1978 Fourth Quarter	1979 First Quarter	1979 Second Quarter	1979 Third Quarter
6. <u>TRANSPORT./COMMUNIC./UTIL.</u>				
Employment	27.9	27.9	27.9	28.0
7. <u>TRADE</u>				
Wholesale Employment ² (000)	20.7	20.8	21.3	21.7
Retail Employment ² (000)	83.9	82.5	85.7	87.9
Seasonally Adjusted*	83.2	85.3	85.6	86.0
Average Weekly Hours	35.4	34.5	35.2	35.7
8. <u>FINANCE</u>				
Bank Debits (\$ mil.)	3,470.6	5,907.3	10,958.6	8,513.5
Seasonally Adjusted*	3,519.4	5,997.3	10,891.2	8,418.2
New Bank Loans (\$ mil.)	267.5	235.1	255.7	271.4
Seasonally Adjusted*	258.9	235.5	259.5	283.8
Bank Demand Deposits (\$ mil.)	1,060.0	962.5	1,045.3	1,035.8
Bank Time Deposits (\$ mil.)	1,679.4	1,712.5	1,779.1	1,832.0
Total Savings Deposits (Savings and Loan Assoc.) (\$ mil.)	1,712.4	1,779.1	1,814.3	1,852.9
New Savings and Loans Received (\$ mil.)	101.1	118.2	115.4	148.7
9. <u>SERVICES AND TOURISM</u>				
Service Employment ² (000)	88.3	84.3	89.6	92.7
Seasonally Adjusted*	90.0	86.8	88.5	89.5
Lodging Employment ² (000)	9.1	8.9	9.6	9.8
Seasonally Adjusted*	9.5	9.4	9.5	9.0
Visits to National Parks/Monuments (000)	79.0	95.3	201.4	251.2
Seasonally Adjusted*	145.0	179.3	165.4	148.9
10. <u>GOVERNMENT</u>				
Federal Employment ² (000)	35.1	35.9	37.1	38.9
State Employment ² (000)	33.7	33.7	33.4	31.9
City and County Employment (000)	49.8	50.8	51.3	48.1

* Seasonally adjusted figures are economic time series which have had seasonal variations removed with statistical processes. These purely seasonal variations include the effects of: the opening and closing of school, the annual pattern of seasons (especially applicable to agricultural data), holidays, and other annually recurring events which influence economic activity. By removing these seasonal variations from raw economic data, month-to-month analysis of trends and unusual fluctuations in economic activity is facilitated.

na Not available.

1 Number of persons by place of residence.

2 Number of jobs by place of work.

ECONOMIC INDICATORS (continued)

			Percentage Change				Percentage Change		
1979			IV 1977- IV 1978	I 1978- I 1979	II 1978- II 1979	III 1978- III 1979	Aug. 78- Aug. 79	Sep. 78- Sep. 79	Oct. 78- Oct. 79
August	September	October							
27.7	28.8	28.7	10.2	8.7	6.6	4.4	4.5	4.4	3.6
21.8	21.7	22.0	6.7	8.2	7.0	6.5	6.9	6.4	6.8
88.3	88.3	87.4	5.8	6.6	5.4	5.7	5.9	5.8	5.7
86.1	86.5	87.4	5.8	6.5	5.4	5.7	6.0	5.9	5.7
35.9	35.5	35.4	- 1.1	- 2.9	- 1.3	- 1.5	- 2.2	0.3	0.3
9,161.5	6,284.2	9,116.0	27.9	86.0	272.7	158.2	164.9	100.6	150.9
8,627.2	7,166.3	9,021.0	27.6	86.7	273.5	154.3	162.4	108.4	144.1
267.4	265.2	257.4	10.4	- 0.1	1.3	12.4	3.2	14.1	- 9.4
253.0	305.4	247.3	10.8	0.0	1.3	13.4	3.3	20.0	- 13.0
1,041.0	1,045.5	1,034.4	10.6	0.1	3.7	- 1.1	0.0	- 1.6	0.3
1,827.9	1,851.1	1,894.9	10.8	10.8	12.4	12.2	12.1	12.7	13.0
1,848.5	1,880.9	na	18.0	17.0	14.7	12.1	12.3	12.1	na
147.6	124.7	na	44.1	24.1	26.1	51.2	61.1	32.7	na
93.5	90.9	89.7	8.0	2.2	2.5	1.9	2.0	1.6	1.4
89.4	90.3	90.5	8.0	2.2	2.4	1.9	2.1	1.6	1.4
9.8	9.7	9.2	5.5	4.4	3.7	- 1.7	- 3.0	- 1.0	- 1.1
8.9	9.2	9.3	5.5	4.3	3.7	- 1.6	- 2.9	- 1.0	- 1.1
356.5	123.7	91.0	- 20.4	- 7.6	3.4	- 6.9	21.4	- 8.0	- 15.1
183.3	145.1	142.6	- 23.0	- 11.7	9.1	- 6.2	19.9	- 8.4	- 11.5
39.0									
39.0	38.6	38.1	2.2	5.2	5.4	9.6	9.6	9.4	8.9
30.6	33.5	35.0	12.1	10.0	6.7	1.8	0.3	2.8	4.8
46.7	50.3	51.0	1.8	2.0	2.0	0.1	- 3.1	3.1	2.4

Sources: New Mexico Department of Human Services, Employment Services Division: Sections 1,5,6,7,9,10; Dun and Bradstreet, Inc.: Section 1; USDA Statistical Reporting Service: Section 2; Oil Conservation Commission: Section 3; New Mexico Bureau of Revenue: Section 3; Building Inspectors' reports, 18 cities: Section 4; F.W. Dodge Co. (a division of McGraw-Hill, Inc.): Section 4; Federal Power Commission: Section 6; Bank reports (36): Section 8; Federal Home Loan Bank of Little Rock: Section 8; United States Department of the Interior, National Park Service: Section 9.

VALUE OF BUILDING PERMITS--SELECTED CITIES

	Residential				Nonresidential			
	October 1978	October 1979	Cumulative Total Through October		October 1978	October 1979	Cumulative Total Through October	
			1978	1979			1978	1979
Alamogordo	\$ 681,000	\$ 246,020	\$ 5,888,042	\$ 5,829,225	\$ 13,050	\$ 84,650	\$ 1,422,925	\$ 979,801
Albuquerque	8,442,979	9,187,673	158,149,418	158,279,666	11,916,383	6,794,029	41,830,729	62,402,043
Artesia	148,500	260,000	1,526,206	2,576,000	18,100	86,730	69,950	2,897,695
Carlsbad	247,300	93,500	6,068,485	2,450,282	79,000	0	1,457,250	1,840,540
Clayton	26,000	30,400	429,341	449,986	0	0	9,600	163,310
Clovis	572,295	212,853	6,124,478	5,187,225	39,320	0	1,158,213	1,674,159
Deming	232,960	166,000	2,665,660	3,153,700	477,051	300,000	749,051	1,227,900
Farmington	884,669	1,426,264	14,197,945	10,224,591	1,156,258	642,633	9,776,439	5,073,978
Gallup	405,924	835,038	5,904,714	5,664,740	1,017,535	4,000	2,991,270	5,557,780
Grants	248,900	389,369	4,424,563	4,098,187	90,000	602,000	8,193,360	1,498,700
Hobbs	529,000	319,500	8,791,800	6,882,250	199,000	0	3,630,475	4,858,010
Las Cruces	2,526,350	1,357,700	20,379,411	18,750,572	353,500	201,000	9,043,719	3,303,047
Las Vegas	396,808	65,150	2,165,686	923,073	0	125,000	0	1,469,659
Lordsburg	0	0	4,450	55,500	0	0	328,808	73,500
Portales	197,800	153,500	1,390,190	1,431,388	0	170,000	476,500	640,300
Raton	89,153	117,000	1,656,206	567,465	555,000	0	1,505,070	394,930
Roswell	698,000	893,400	10,782,719	9,868,675	48,400	158,225	1,957,130	1,615,311
Santa Fe	1,989,930	2,426,028	25,860,735	22,997,687	665,000	53,000	6,793,254	3,468,800
Tucumcari	35,600	na	387,067	na	0	na	448,692	na
TOTAL	\$18,353,168	\$ na	\$276,797,116	\$ na	\$16,627,597	\$ na	\$91,842,435	\$ na

na Not available.

Source: Individual reports by city building inspectors.

ESTIMATED CIVILIAN LABOR FORCE AND EMPLOYMENT

	New Mexico			Albuquerque SMSA ¹		
	October 1978 ^r	September 1979 ^r	October 1979 ^p	October 1978 ^r	September 1979 ^r	October 1979 ^p
TOTAL CIVILIAN LABOR FORCE	538,300	555,700	559,100	197,100	205,100	207,000
Employment ²	509,700	525,200	526,900	186,800	194,200	195,900
Unemployment	28,600	30,500	32,200	10,300	10,900	11,100
Percentage of Labor Force	5.3	5.5	5.8	5.2	5.3	5.4
Nonagricultural Wage and Salary Employment	454,400	474,200	473,500	182,000	188,300	189,700
Mining	25,200	27,100	27,100	na	na	na
Contract Construction	37,000	38,100	37,500	15,900	15,900	15,600
Manufacturing	34,200	35,300	35,500	17,500	18,200	18,300
Durable Goods	19,600	20,800	20,800	12,000	12,600	12,700
Nondurable Goods	14,600	14,500	14,700	5,500	5,600	5,600
Transportation and Public Utilities	27,700	28,800	28,700	10,800	11,800	11,900
Trade	103,300	110,000	109,400	46,100	48,400	48,400
Wholesale	20,600	21,700	22,000	12,300	13,000	13,100
Retail	82,700	88,300	87,400	33,800	35,400	35,300
Finance, Insurance and Real Estate	20,300	21,600	21,500	10,300	11,200	11,200
Services and Miscellaneous	88,500	90,900	89,700	40,800	42,000	42,200
Government	118,200	122,400	124,100	40,600	40,800	42,100
Federal	35,000	38,600	38,100	12,100	12,700	12,500
State	33,400	33,500	35,000	10,500	9,800	11,200
Local	49,800	50,300	51,000	18,000	18,300	18,400

na Not available, less than 50 jobs.

p Preliminary.

r Revised.

¹ Albuquerque Standard Metropolitan Area includes Bernalillo and Sandoval Counties.² Includes labor disputes.

Source: New Mexico Employment Security Department.

ALBUQUERQUE¹ BANKING DATA (\$000s)

	October 1978	October 1979	% Change October 1978- October 1979
BANKS			
Bank Debits	\$2,556,494.5	\$7,806,149.1	205.3
New Loans and Discounts	140,454.0	135,107.2	- 3.8
Demand Deposits	527,122.5	525,868.2	- 0.2
Time Deposits	827,471.6	921,680.0	11.4
SAVINGS AND LOAN			
Savings Deposits	\$ 767,800.0	\$ 867,500.0 ^p	13.0
New Savings Received	60,600.0	101,900.0 ^p	68.2

p Preliminary

¹ Bernalillo County for bank information, Albuquerque SMSA for savings and loan data.

Sources: Five reporting banks and
Federal Home Loan Bank of Little Rock

CONSUMER PRICE INDEXES AND INDEXES OF SELECTED CATEGORIES

U.S. City Average
(1967=100)

	All Urban Consumers				Revised Series, Wage Earners and Clerical Workers			
			% Change				% Change	
	Sept. 1979	Oct. 1979	Oct. 78- Oct. 79	Sept. 79- Oct. 79	Sept. 1979	Oct. 1979	Oct. 78- Oct. 79	Sept. 79- Oct. 79
ALL ITEMS	223.4	225.4	12.2	0.9	223.7	225.6	12.4	0.8
Food	237.1	238.2	9.9	0.5	237.3	238.3	10.0	0.4
Housing	234.6	237.7	13.5	1.3	234.5	237.7	13.7	1.4
Apparel and Upkeep	169.8	171.0	4.7	0.7	169.3	170.8	4.4	0.9
Transportation	221.4	222.7	17.4	0.6	222.4	223.4	17.4	0.4
Medical Care	243.7	245.9	9.4	0.9	244.7	247.2	9.9	1.0
Entertainment	191.1	192.0	7.1	0.5	190.2	191.4	7.3	0.6
Other Goods and Services	201.7	202.3	7.4	0.3	200.6	201.4	7.4	0.4

Source: U.S. Department of Labor, News.

HOURS AND EARNINGS OF PRODUCTION CONSTRUCTION AND NONSUPERVISORY EMPLOYEES

New Mexico

	Average Weekly Hours			% Change Oct. 78- Oct. 79	Average Hourly Earnings			% Change Oct. 78- Oct. 79
	Oct. 1979P	Sept. 1979	Oct. 1978		Oct. 1979P	Sept. 1979	Oct. 1978	
Mining	45.4	45.6	43.0	5.6	8.41	8.53	7.77	8.2
Construction	36.4	35.8	38.5	-5.5	8.88	8.69	8.10	9.6
Manufacturing	39.2	38.9	38.6	1.6	5.30	5.51	4.94	7.3
Durable Goods	41.5	40.6	38.9	6.7	5.69	5.93	5.39	5.6
Nondurable Goods	35.5	36.2	38.1	-6.8	4.58	4.74	4.26	7.5
Communication and Utilities	41.0	41.7	41.6	-1.4	7.63	7.56	7.01	8.8
Trade ¹	35.4	35.5	35.3	0.3	5.51	5.71	5.12	7.6
Banking	41.4	42.6	40.9	1.2	3.69	3.70	3.51	5.1

p Preliminary.

¹ Excludes eating and drinking places.

Source: New Mexico Employment Security Department.

ALBUQUERQUE FOOD PRICE INDEX: NOVEMBER 1979
June 1974 = 100(all items)

	% Change			
	Nov. 79 Index	June 74 Nov. 79	Nov. 78 Nov. 79	Oct. 79 Nov. 79
ALL FOOD ITEMS	155.0	55.0	10.9	2.9
Cereals and Baked Products	147.5	47.5	19.6	2.4
Meat, Fish, Poultry	166.1	66.1	15.8	4.3
Fruits and Vegetables	150.1	50.1	1.4	0.8
Dairy Products	139.6	39.6	10.9	2.8
Other Food Items	157.6	57.6	8.3	2.8

Food Items	Quantity	November 1979		% Change		
		Price	Index	June 74 Nov. 79	Nov. 78 Nov. 79	Oct. 79 Nov. 79
Flour, all purpose	5 lb	\$1.14	98.7	- 1.3	25.5	5.4
Corn Flakes	12 oz	.63	163.0	63.0	10.1	5.5
Bread, white	1b	.55	154.3	54.3	26.0	0.2
Cookies, cream	16 oz	1.20	152.4	52.4	14.0	3.1
Hamburger	1b	1.65	190.4	90.4	46.5	1.3
Round steak, bone-in	1b	2.47	196.5	96.5	27.9	2.5
Sirloin steak, boneless	1b	2.80	161.6	61.6	22.0	3.9
Chuck roast, blade	1b	1.79	236.2	136.2	33.8	16.0
Beef liver	1b	1.28	136.7	36.7	51.7	- 1.0
Pork chops	1b	2.22	157.4	57.4	- 8.2	0.3
Bacon, sliced	1b	1.77	153.3	53.3	-13.6	- 2.8
Pork roast, loin	1b	1.62	119.5	19.5	8.1	- 2.6
Frankfurters	1b	2.16	171.6	71.6	20.8	4.5
Fryers, whole	1b	.61	122.9	22.9	1.8	17.8
Tuna, light chunk	6 oz	.90	155.2	55.2	- 5.7	1.7
Bananas	1b	.32	159.8	59.8	14.3	- 0.5
Oranges	dozen	1.66	187.8	87.8	3.7	- 2.4
Lettuce	1b	.45	104.1	4.1	- 8.8	- 7.8
Potatoes, except baking	10 lb	1.52	79.0	- 21.0	31.5	4.1
Tomatoes	1b	.78	148.1	48.1	22.6	39.0
Carrots	1b	.39	170.2	70.2	- 8.3	-12.8
Onions, yellow	1b	.22	154.5	54.5	21.2	7.9
Fruit cocktail	#303	.58	155.8	55.8	0.0	0.0
Tomatoes, canned	#303	.55	167.4	67.4	- 4.0	- 0.2
Peas, canned	#303	.44	146.8	46.8	1.0	6.8
Frozen orange juice	6 oz	.49	185.0	85.0	- 9.3	0.0
Frozen broccoli spears	10 oz	.62	152.0	52.0	- 6.4	- 1.4
Milk	quart	.55	132.5	32.5	14.0	3.5
Evaporated milk	13 oz	.46	155.2	55.2	13.3	1.1
Ice cream	1/2 gal	1.62	139.2	39.2	2.0	0.1
Cheese, sliced	6 oz	.92	155.1	55.1	10.2	4.1
Eggs, AA large	dozen	.96	157.3	57.3	15.0	22.5
Margarine	1b	.71	117.5	17.5	- 8.7	- 1.1
Sugar	5 lb	1.31	91.1	- 8.9	- 0.7	1.4
Coffee	1b	3.17	245.2	145.2	9.8	- 0.1
Instant coffee	6 oz	3.60	227.2	127.2	11.1	0.1
Cola drink	10 oz ctn	1.25	159.0	59.0	8.5	- 4.7
Chicken noodle soup	10 oz	.30	132.1	32.1	8.2	1.4
Baby food, strained	4 oz	.24	179.3	79.3	16.1	- 0.1
Frozen french fries	9 oz	.43	202.0	102.0	17.2	5.0

na Not available.

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The New Mexico Economy in 1979

and Outlook for the 1980s

THE NEW MEXICO ECONOMY IN 1979

Introduction

In 1979 the New Mexico economy demonstrated continued, but more modest, expansion compared to its outstanding performance in 1978. Much of the change in economic activity in New Mexico can be traced to the marked increase in the cost of crude oil imports. During 1979 the cost per barrel of imported crude oil rose from \$12.40 to over \$24.00. The result was significantly higher gasoline costs throughout the U.S. as well as an annual rate of inflation over 13 percent. Inflation diminished the growth of real personal income (actual spendable income adjusted for inflation) in both the U.S. and New Mexico. In order to allay the growing rate of inflation and to protect the purchasing power of the consumer, the Federal Reserve Board in late 1979 imposed a credit tightening policy, causing interest rates to increase significantly. For example, by the end of the year, the cost of financing a conventional mortgage in New Mexico reached nearly 14 percent. These factors, individually and in combination, worked to affect growth in certain sectors of the state economy in 1979. Most negatively affected were tourism-related and construction activity, while the mining sector tended to benefit.

Aggregate Activity

Despite mixed sectoral behavior resulting from growing rates of inflation and interest, the economy of New Mexico continued to perform better than that of the U.S. (see Table 1). In 1979 the civilian labor force in New Mexico grew by 3.8 percent, nearly equal to its growth in 1978 of 4.0 percent. However, the U.S. civilian labor force expanded by only 2.5 percent in 1979. Decline in growth of the national civilian labor force can be

attributed, in part, to the large number of layoffs and a general weakening in the economy in 1979 which discouraged certain segments of the population (e.g., housewives, part-time students) from actually seeking employment.

The New Mexico economy expanded sufficiently in 1979 to absorb its growing labor force. Employment grew at a rate of 3.8 percent. Although the rate of employment growth declined by almost 4 percentage points in 1979 compared to 1978, employment increases in New Mexico still exceeded those of the U.S. The unemployment rate in New Mexico remained at 5.7 percent in 1979; the U.S. rate declined 0.2 of a point to 5.8 percent. Finally, as a result of continued expanding employment in the state, personal income in New Mexico grew 13.3 percent compared to 12.0 percent growth for the U.S.

TABLE 1

	1977	1978	1979
Total Civilian Labor Force			
New Mexico	505,000	525,000	544,700 ^p
% change	8.4	4.0	3.8
U.S. (in thousands)	97,370	100,420	102,930
% change	2.9	3.1	2.5
Total Employment			
New Mexico	466,000	495,000	513,800
% change	10.2	6.2	3.8
U.S. (in thousands)	87,302	91,031	93,648
% change	3.7	4.3	2.9
Unemployment Rate (percentage points)			
New Mexico	7.8	5.7	5.7 ^p
U.S.	7.0	6.0	5.8
Personal Income (billions of current \$)			
New Mexico	7.015	7.969	9.032 ^e
% change	12.6	13.6	13.3
U.S.	1,529.0	1,717.4	1,923.0
% change	10.7	13.3	12.0

e Estimated with three quarters of actual data and a fourth quarter estimate for personal income in New Mexico courtesy of the BBER FOR-UNM Economic Forecasting Service.

p Preliminary.

1 Percentage change compared to the previous year.

Source: New Mexico Employment Security Department; U.S. Department of Labor, Bureau of Labor Statistics; Bureau of Business and Economic Research FOR-UNM Economic Forecasting Service.

Sectoral Activity

Because of its scenic beauty, large numbers of tourists visit New Mexico's quaint towns and its vast state and national parks. Tourism has been the economic mainstay of many areas of the state, contributing substantially to economic activity in the services sector, which accounts for 19 percent of all nonagricultural employment in New Mexico. However, in 1979 gasoline prices nearly doubled in the U.S., and high rates of inflation diminished growth of household purchasing power. As a result, tourism in the state declined in 1979. Visits to national parks in New Mexico fell by nearly 4 percent (see Recreation and Tourism Section). Visits during the late summer declined by 6.9 percent compared to activity during the same period in 1978. This is attributed not only to higher prices for gasoline, but also to the uncertainty which prevailed at the time regarding the availability of fuel. Growth in visits to state parks in New Mexico in 1979 also declined compared to 1978, increasing by only 13.7 percent. Service employment in recent years grew at rates near 9 percent (see Services Section), but in 1979 it showed less than 2 percent growth. This decline was led by a weak 1.1 percent growth in

the lodging establishments subsector. Employment in eating and drinking establishments increased 6.2 percent in 1979 compared to 10.7 percent the previous year.

Interest rates in 1979 also contributed to a reduction in New Mexico's economic growth. The construction sector in 1978 experienced a year of outstanding growth; however, this was not the case in 1979, with conventional mortgage lending rates moving from 9.3 percent to nearly 14.0 percent. This substantial increase in financing costs, coupled with declining growth of real personal income, directly affected the residential construction subsector. Growth of the number of residential building permits issued in the state declined by more than 25 percent. Construction employment in New Mexico, which expanded by 15.3 percent in 1978, grew by a modest 2.5 percent in 1979 (see Construction Section).

Several sectors in the state economy in 1979 demonstrated growth comparable to 1978. For example, government employment expanded by the same percent (4.7) as in 1978; 1979 trade employment grew 6.0 percent compared to 6.3 percent the previous year. (See Government and Trade Sections.) The stability in government

TABLE II
SELECTED U.S. INDEXES OF BUSINESS ACTIVITY
1967 and 1973-1979
Annual Averages
1967=100

	1967	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
PRODUCER PRICE INDEX, ALL ITEMS	100.0	134.7	160.1	174.9	183.0	194.2	209.3	235.4	12.5
Farm Products	100.0	176.3	187.7	186.7	191.0	192.5	212.7	241.4	13.5
Foods & Feeds, Processed	100.0	148.1	170.9	182.6	178.0	186.1	202.6	222.5	9.8
Fuels & Related Products & Power	100.0	134.3	208.3	245.1	265.6	302.2	322.5	408.1	26.5
CONSUMER PRICE INDEX, ¹ ALL ITEMS	100.0	133.1	147.7	161.2	170.5	181.5	195.4	217.4	11.3
Food	100.0	141.4	161.7	175.4	180.8	192.2	211.4	234.5	10.9
Housing	100.0	135.0	150.6	166.8	177.2	186.5	202.8	227.6	12.2
Medical Care	100.0	137.7	150.5	168.6	184.7	202.4	219.4	239.7	9.3
CONSTRUCTION COST INDEX ²	100.0	149.9	174.3	191.1	198.4	216.4	242.9	274.3 ³	12.9

p Preliminary.

¹ All urban consumers.

² U.S. Department of Commerce composite.

³ Estimates based on available data.

Source: U.S. Department of Commerce, *Business Statistics*, and *Survey of Current Business*, various issues.

employment at the federal level in the state may be attributed to the ceiling currently placed on federal employment by the President. State and local governments in New Mexico have tried to maintain solvency through a combination of fiscal austerity and hiring only through attrition. Trade employment maintained its growth in 1979 by surprisingly strong retail sales resulting from continued consumer expenditure, particularly in durable goods.

Growth in 1979 in manufacturing employment exceeded growth figures for 1978 (see Manufacturing Section). Expansion in manufacturing, led by growth of durable goods employment, is attributed to the sector's cautious limit of inventories maintained since the inventory-induced recession in 1974-75. Inventories were kept lean in 1979 in anticipation of another recession while

wholesale and retail trade expanded at 1978 levels. The response of manufacturing was to also expand, particularly in the durable subsector.

Mining, which performed better than any other sector in the state, benefitted significantly from the increase in imported crude oil prices. In 1979 New Mexico produced petroleum, natural gas, coal, and uranium. Although production of oil and gas remained flat or declined, the unit price of oil and gas rose. Exploration for new sources of oil and gas also increased. Thus, mining employment showed the greatest growth of all nonagricultural employment in 1979 in New Mexico and replaced Construction as the state's leading economic sector. Growth of mining employment was led by a 10.1 percent increase in metal mining resulting from price increases in copper, silver, and gold. The boom in uranium has weakened, however, due to low prices and uncertainty over the future of nuclear power. As an alternative to oil and gas-produced energy, coal mining employment expanded 8.7 percent, compared to 2.2 percent growth in 1978. Oil and gas was the only subsector which registered declining employment growth in 1979.

TABLE III
PER CAPITA INCOME
Southwest and Rocky Mountain Regions

	1977	1978	% Change
SOUTHWEST	\$6,703	\$7,527	12.3
Arizona	6,453	7,372	14.2
New Mexico	5,864	6,574	12.1
Oklahoma	6,409	7,137	11.4
Texas	6,891	7,730	12.2
ROCKY MOUNTAIN	\$6,656	\$7,478	12.3
Colorado	7,196	8,105	12.6
Idaho	6,197	7,015	13.2
Montana	6,092	6,755	10.9
Utah	5,895	6,566	11.4
Wyoming	7,571	8,636	14.1
U.S. AVERAGE	\$7,042	\$7,836	11.3

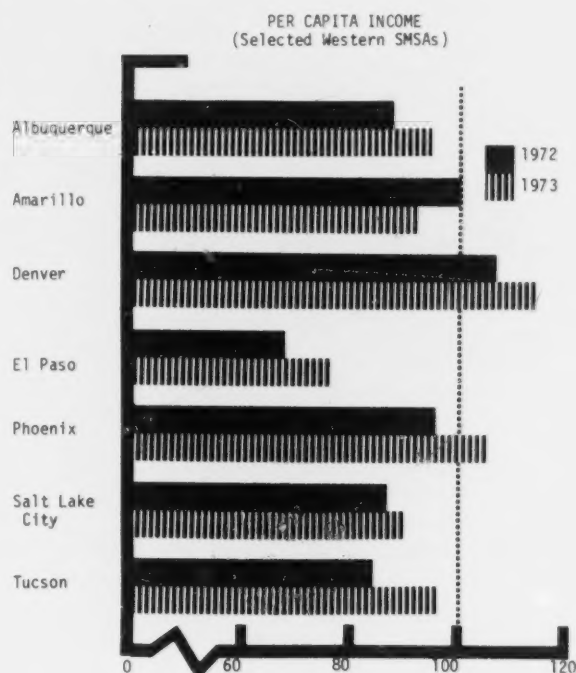
Source: Survey of Current Business, August, 1979.

TABLE IV
PER CAPITA INCOME¹
Selected Western SMSAs

	Dollars			% of U.S. SMSA Average		% Change	
	1972	1976	1977	1972	1977	1972	1977
Albuquerque	\$4,235	\$6,008	\$6,592	94.3	88.0	41.9	9.7
Amarillo	4,144	6,766	7,485	92.2	99.9	63.3	10.6
Denver	5,116	7,272	8,050	113.9	107.4	42.1	10.7
El Paso	3,426	4,692	5,071	76.3	67.7	37.0	8.1
Phoenix	4,709	6,432	7,174	104.8	95.7	36.6	11.5
Salt Lake City	4,045	5,910	6,466	90.0	86.3	46.1	9.4
Tucson	4,306	5,838	6,317	95.8	84.3	35.6	8.2
U.S. SMSA Average	\$4,493	\$6,823	\$7,494	100.0	100.0	51.9	9.8

¹ By place of residence

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, April, 1979; and Local Area Personal Income 1971-1976, Vol. 1, Summary.



Conclusion

Although performing better than the national economy, New Mexico demonstrated slow economic growth in 1979 compared to 1978. Because of continuing increases in oil prices, inflation, and interest rates, 1979 sectoral activity in the state was mixed. Construction, Services, and Tourism fared poorly compared to 1978; Manufacturing and Mining, particularly the latter, performed better than in the previous year. Trade and government employment growth remained essentially constant.

NEW MEXICO OUTLOOK FOR THE 1980s

The beginning of a new decade presents the opportunity to take stock of how far the state's economy has come during the last ten years and where it is likely to be ten years from now. Normally, in this space of the January-February issue of *New Mexico Business*, we discuss the outlook of the state's economy for the coming year. With this first issue of the decade of the 1980s, it seems more appropriate to take a broader, longer look ahead to what might be in store for New Mexico.

To do this let us first start by reviewing the performance of the New Mexico economy during the seventies. This will place the decade of the 1980s into the perspective of our most recent experience. Table VII displays annual rates of compound growth for selected New Mexico and U.S. demographic and economic statistics. For every indicator and in every time period during the 1970s New Mexico grew at a faster rate than the nation as a whole, with the one exception of mining employment in the pre-oil embargo period. New Mexico's population and total non-agricultural employment grew at twice the national rate throughout the decade. Real per capita income in New Mexico grew at a rate half a percentage point better than real per capita income nationally in the pre-oil embargo period and improved a full percentage point over the national rate in the post-oil embargo period. During this latter period of the 1970s, sharply higher prices for energy began to generate sharply higher energy-related employment in New Mexico.

New Mexico, however, was not insulated from the eroding effects of inflation and declining productivity, which in the latter part of the decade strongly reduced real growth in personal income below the level prevailing in the early part of the decade. Even with the energy boom creating new jobs, New Mexico's population growth rate slowed in the post-oil embargo period, reflecting the fact that direct mining employment in 1979 is only 5.7 percent of total nonagricultural employment.

How do all these impressive sounding economic gains relate to the economic well-being of the average New Mexico citizen? In 1970 real per capita income in New Mexico stood at 78.2 percent of the national average. By 1978 this ratio had increased to 83.9 percent. Thus, near the end of the 1970s—a decade characterized by sustained state economic growth fueled by a world energy crisis and changing national migration patterns—the state's real per capita income still trailed more than 16 percent behind the national average. Even with future state economic performance similar to that of the past decade, progress in reaching even average national levels of well-being for New Mexico's citizens is obviously a long term affair.

Let us turn now to a discussion of the outlook for the 1980s. The same factors that accounted for the strong economic gains in the 1970s will still be present in New Mexico's future in the 1980s. America's search for alternative sources of

TABLE V
CONSTRUCTION CONTRACTS
SOUTHWESTERN STATES AND U.S.
(in thousands)

	1978	1979 ^p	% Change 1978-1979
ARIZONA			
Residential	\$ 1,775,409	\$ 2,045,591	15.2
Nonresidential	706,213	1,048,963	48.5
COLORADO			
Residential	\$ 1,498,018	\$ 1,759,944	17.5
Nonresidential	783,909	959,812	22.4
NEW MEXICO			
Residential	\$ 479,447	\$ 499,718	4.2
Nonresidential	218,509	316,746	45.0
UTAH			
Residential	\$ 734,995	\$ 675,421	- 8.1
Nonresidential	517,140	565,704	9.4
UNITED STATES			
Residential	\$19,004,773	\$20,538,930	8.1
Nonresidential	9,369,327	11,462,360	22.3

p. Preliminary.

Source: F. W. Dodge Division, McGraw-Hill Information Systems Co.

energy to reduce this country's dependence on imported oil will find New Mexico playing a significant supporting role in the 1980s. New Mexico is blessed with a diversified supply of alternative energy sources—coal, uranium, oil, natural gas, geothermal and sunshine. Continued exploration and production of these natural resources will be a major contributor to state economic growth in the decade ahead.

The potential for coal development within New Mexico is only now being realized. Long delayed by environmental and federal leasing regulations, coal's future in serving the nation's energy needs seems assured by the expressed national commitment to a synfuel program as well as growing needs for electricity generation in the state. Much of the growth in uranium production in the 1980s is known with certainty since it is committed under long-term contracts with existing or under-construction nuclear power plants. The present uncertainty surrounding the future of nuclear

energy in this country will impact on New Mexico primarily through reduced uranium exploration activity in the 1980s, but curtailed mining activity will not occur until the 1990s. However, in the future should national policy go against

TABLE VI
METROPOLITAN AREA CONSTRUCTION CONTRACTS
(in thousands)

	1978	1979 ^p	% Change 1978-1979
ALBUQUERQUE*			
Residential	\$ 236,504	\$ 234,415	- 0.9
Nonresidential	88,218	138,007	56.4
DENVER			
Residential	\$ 914,589	\$ 977,615	6.9
Nonresidential	568,948	668,709	17.5
PHOENIX			
Residential	\$1,239,619	\$1,369,984	10.5
Nonresidential	442,785	711,333	60.6
SALT LAKE CITY			
Residential	\$ 465,488	\$ 403,557	-13.3
Nonresidential	361,599	441,043	22.0
TUCSON			
Residential	\$ 281,516	\$ 340,076	20.8
Nonresidential	154,279	226,401	46.7

* Includes Bernalillo and Sandoval Counties.

^p Preliminary.

Source: F. W. Dodge Division, McGraw-Hill Information Systems Co.

TABLE VII

ANNUAL RATES OF GROWTH (COMPOUND)
FOR SELECTED NEW MEXICO AND U.S.
DEMOGRAPHIC AND ECONOMIC STATISTICS

	Pre-Oil Embargo 1970 to 1973	Post-Oil Embargo ¹ 1973 to 1978(9)	Decade 1970 to 1978(9)
New Mexico Population ²	2.6%	2.1%	2.2%
U.S. Population ²	1.1%	0.8%	0.9%
New Mexico--Total Nonagricultural Employment ³	5.7%	5.0%	5.3%
U.S.--Total Nonagricultural Employment ³	2.7%	2.5%	2.6%
New Mexico--Mining Employment ³	-1.0%	8.3%	5.1%
U.S.--Mining Employment ³	1.0%	6.8%	4.8%
New Mexico Real Personal Income ⁴	6.9%	5.3%	5.9%
U.S. Real Personal Income ⁴	4.9%	2.8%	3.6%
New Mexico Real Per Capital Income ⁴	4.4%	3.2%	3.7%
U.S. Real Per Capital Income ⁴	3.9%	2.1%	2.7%

Table prepared by the Bureau of Business and Economic Research, The University

¹ The growth rates for the income statistics are to 1978 only since the 1979 income statistics have not yet been reported. Other statistics are to 1979.

² Population rates are based on U.S. Bureau of the Census statistics.

³ Calculated from U.S. Bureau of Labor statistics and New Mexico Employment Security Department statistics.

⁴ Calculated from U.S. Department of Commerce statistics. Adjusted for price changes by the U.S. Deflator for Personal Consumption Expenditures.

nuclear energy, the nation will be forced to rely more heavily on alternative sources, which as mentioned previously, New Mexico also possesses.

During the 1970s, both oil and natural gas production in New Mexico declined, and this trend is expected to continue in the 1980s. However, federal decontrol of both oil and natural gas prices has created strong incentives for additional exploration activity. In fact, during 1978 more oil and natural gas wells were drilled in New Mexico than in any year since 1961. During the 1980s New Mexico's economy should benefit from the development of nonconventional energy sources, particularly from the research and demonstration of geothermal, solar and wind energy sources.

State population growth should also provide a basis for economic gains in the 1980s. The Bureau of Business and Economic Research (BBER), using U.S. Bureau of the Census data, estimates New Mexico population in 1980 to be in excess of one and a quarter million. By 1990 the BBER projects state population to be approximately 1,530,000, an increase of over 22 percent. Employment related migration explains much of this expected growth, but it also reflects migration patterns from the cold Northeast and Midwest to the warm, sunny Southwest. This expanding population will require the construction of new houses and apartments; expanded retail trade centers; financial, legal and medical services; and additional public expenditures for schools, roads and community services. All of these will add up to expanding job opportunities and personal income gains for New Mexico's citizens.

New Mexico can even expect increased defense spending in the future to stimulate the state economy. Recent international events have created a strong consensus in this country to increase defense expenditures. With Sandia Labs, Los Alamos Scientific Laboratories, Kirtland and White Sands Missile Range, New Mexico should expect an increased flow of federal defense dollars to the state, providing additional jobs and income.

When discussing the past or future economic performance of the state's economy, it is important to distinguish between what happens to us and what we, New Mexicans, cause to happen. For example, energy development, population

increases via migration, and even increased defense spending are happening to us. Thus, we cannot really take basic credit for the economic improvement that accompanies these events. The credit lies largely with national events and policies.

As mentioned previously, even with the sustained economic performance of the past decade, reaching even average national levels of economic performance, e.g., per capita income, will be a long-term affair. Using the national and New Mexico rates of growth in the decade of the 1970s (2.7 percent and 3.7 percent, respectively), New Mexico would not reach the average national per capita income until somewhere in the five-year period between 1995-2000. If, instead of this 1 percent differential, New Mexico falls back to the 0.5 percent differential associated with the early 1970s, it would take until 2020-2025 before New Mexico would reach parity with the national average per capita income.

In order to maintain the 1 percent differential above into the 1980s, New Mexico will have to have an energy boom even greater than that of the 1970s since we will now have to grow off a larger base and carry increasing numbers of people along in the improvement. There is another alternative to simply letting events happen to us. We can try to take some control of our state's future and begin to create industries. This is particularly important for the period beyond the current energy boom which relies exclusively on *nonrenewable* natural resources and, therefore, cannot be sustained indefinitely.

If New Mexico's economy is to prosper in its post-natural resource future, sustainable, non-resource based industries will have to be developed. Otherwise, we will depend once again on what happens to us. And there is no guarantee that that will be favorable to a sustaining state economy. Bear in mind, however, that such a public policy takes years to formulate, much less implement. One of the most striking observations about the nation's energy situation is the fact that over six years after the first oil embargo we are just now nearing a definite national policy on energy. The 1980s are not too early to be considering New Mexico's future beyond the present energy boom.

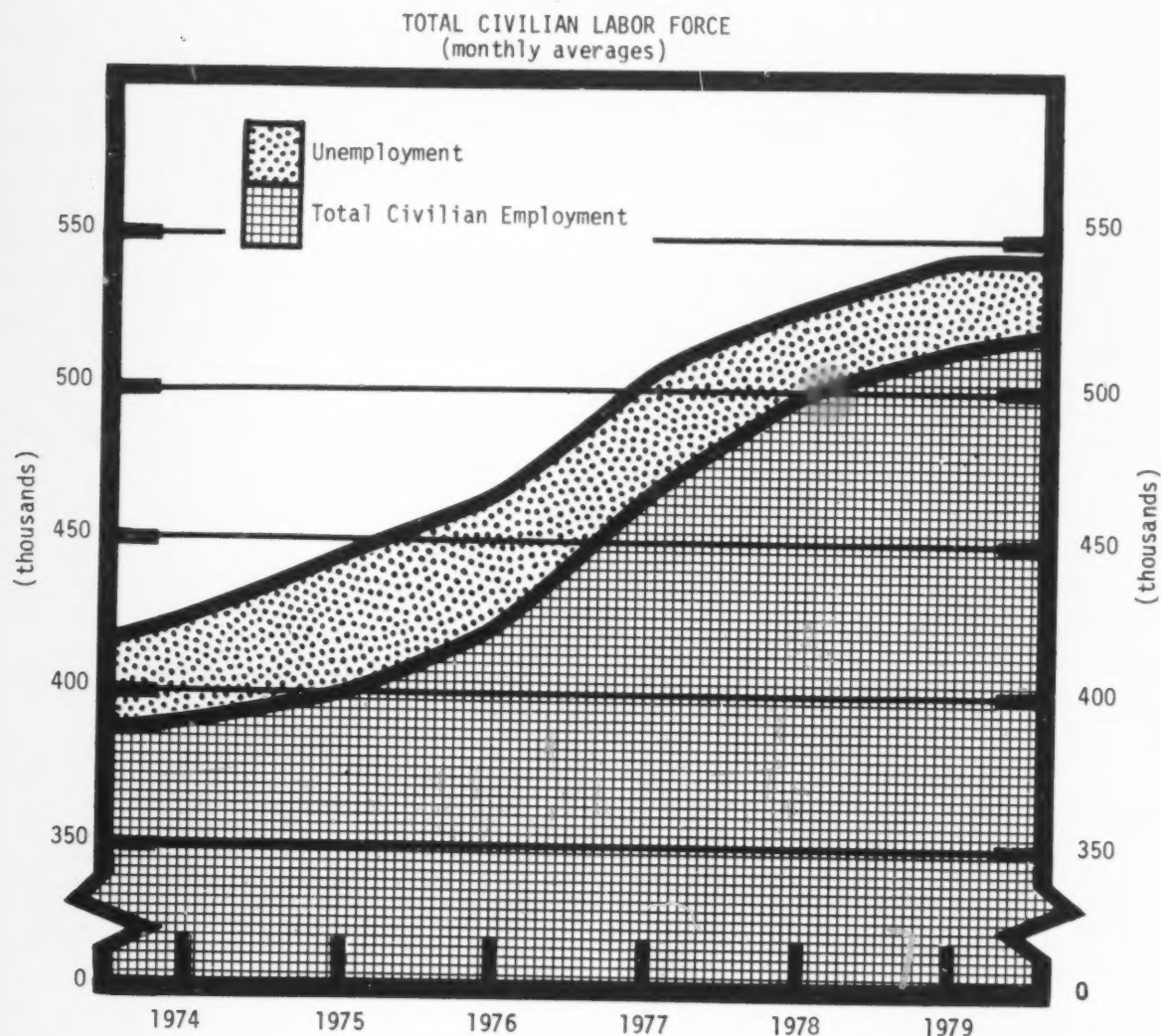
Sector Reports

TOTAL CIVILIAN EMPLOYMENT

Total civilian employment increased to almost 545,000 in 1979. While the year marked an increase of 18,800 in civilian employment, an additional 19,700 persons joined the labor force. The number unemployed was subsequently increased

by 900—although the rate of unemployment remained the same, 5.7 percent, from 1978 to 1979.

The difference between civilian employment and nonagricultural wage and salary employment is due not only to agricultural employment, but



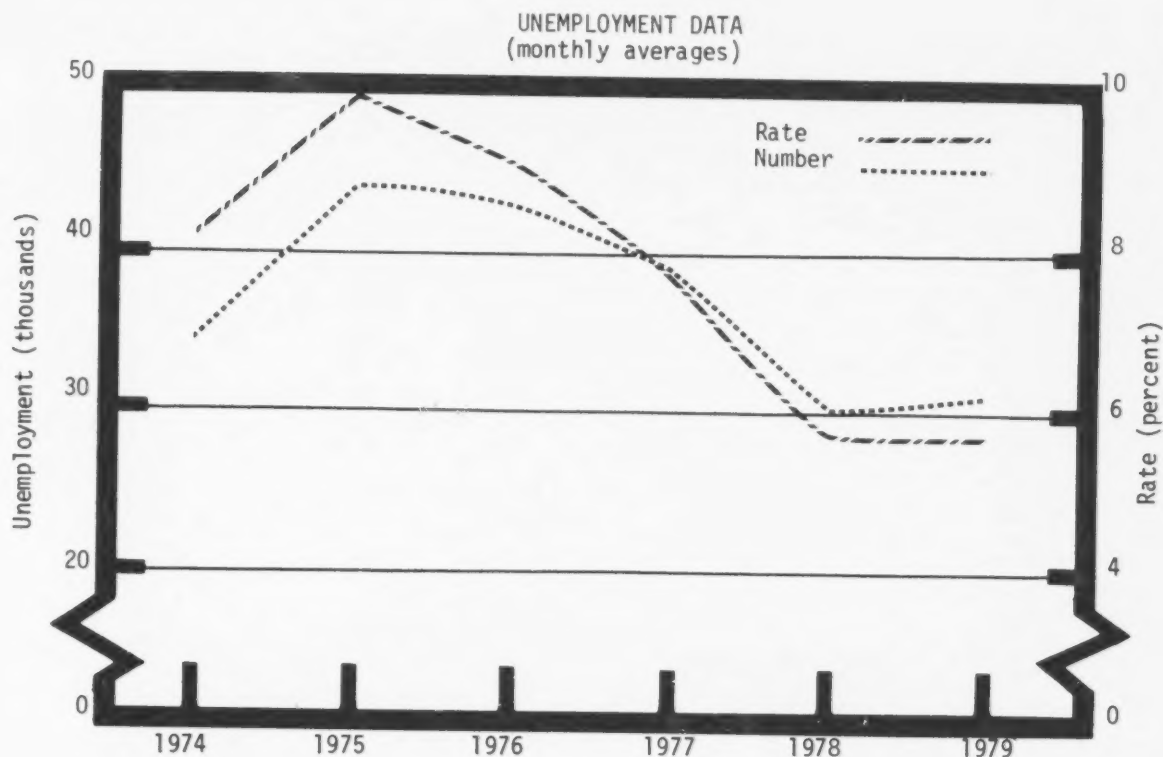
TOTAL CIVILIAN EMPLOYMENT IN NEW MEXICO*
(monthly averages)

	1970	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
TOTAL CIVILIAN LABOR FORCE	350,200	423,600	444,300	466,000	505,000	525,000	544,700	3.8
Total Civilian Employment	323,200	389,000	399,700	423,000	466,000	495,000	513,800	3.8
Total Unemployment	27,000	34,600	44,600	43,000	39,000	30,000	30,900	3.0
Rate (Unadjusted)	7.7	8.2	10.0	9.2	7.8	5.7	5.7	0.0
Nonagricultural Wage & Salary Employment ¹	292,600	360,200	370,200	390,000	415,400	444,700	465,700	4.7
Manufacturing	21,400	29,600	28,600	30,300	32,200	33,300	35,000	5.1
Mining	17,000	18,700	20,300	21,600	23,400	24,500	26,700	9.0
Contract Construction	17,400	25,900	25,200	26,100	30,700	35,400	36,300	2.5
Transportation & Public Utilities	20,400	23,300	23,000	23,400	24,600	26,600	28,200	6.0
Wholesale & Retail Trade	62,000	80,200	83,600	90,400	95,500	101,500	107,600	6.0
Finance, Insurance & Real Estate	12,200	15,900	16,300	17,000	18,300	19,900	21,200	6.5
Services & Miscellaneous	53,000	64,000	68,300	73,300	79,700	87,300	89,000	1.9
Government	89,200	102,500	104,700	108,000	111,000	116,200	121,700	4.7

* Detail may not add to total because of rounding.

^p Preliminary.¹ Nonagricultural wage and salary employment is not strictly comparable to total civilian employment since double job holders and in-commuting workers are excluded from total civilian employment and included in nonagricultural wage and salary employment.

Source: New Mexico Employment Security Department.



also to the number of multiple job-holders and the extent of interstate commuting. Civilian employment measures employment by place of residence; nonagricultural employment, jobs by place of work. Compared to an increase of 3.8 percent

in civilian employment, the number of nonagricultural jobs increased by 4.7 percent from 1978 to 1979. Although the number of jobs increased in each of the major sectors, there were real declines in average hourly earnings.

AVERAGE HOURLY EARNINGS BY SECTOR
NEW MEXICO
(in constant 1979 dollars)

	1969	1974	1975	1976	1977	1978	1979 ^P	% Change 1969-1979	% Change 1978-1979
Mining	\$7.31	\$7.32	\$7.63	\$7.93	\$8.14	\$8.29	\$8.23	12.6	-0.7
Construction	9.21	9.24	9.10	9.63	9.10	9.13	8.83	- 4.1	-3.3
Manufacturing	5.21	4.87	4.90	5.18	5.31	5.33	5.33	2.3	0.0
Durable Goods	na	5.20	5.26	5.52	5.64	5.73	5.74	NA	0.2
Nondurable Goods	na	4.28	4.25	4.63	4.76	4.68	4.63	NA	-1.1
Communications & Utilities	6.43	7.05	7.17	7.46	7.57	7.62	7.28	13.2	-4.5
Trade ¹	4.89	5.03	5.26	5.38	5.53	5.53	5.49	12.3	-0.7
Banking	na	4.11	4.07	4.09	4.08	3.87	3.66	NA	-5.4

na Not available.

NA Not applicable.

p Preliminary.

¹ Excludes eating and drinking places.

Source: New Mexico Employment Security Department; U.S. Department of Labor, Bureau of Labor Statistics.

AVERAGE HOURLY EARNINGS BY SECTOR
NEW MEXICO
(in current dollars)

	1969	1974	1975	1976	1977	1978	1979 ^P	% Change 1969-1979	% Change 1978-1979
Mining	\$3.69	\$4.97	\$5.66	\$6.22	\$6.80	\$7.45	\$8.23	123.0	10.5
Construction	4.65	6.28	6.75	7.55	7.60	8.21	8.83	89.9	7.6
Manufacturing	2.63	3.31	3.63	4.06	4.43	4.79	5.33	102.7	11.3
Durable Goods	na	3.53	3.90	4.33	4.71	5.15	5.74	NA	11.5
Nondurable Goods	na	2.91	3.15	3.63	3.97	4.21	4.63	NA	10.0
Communication & Utilities	3.25	4.79	5.32	5.85	6.32	6.85	7.28	124.0	6.3
Trade ¹	2.47	3.42	3.90	4.22	4.62	4.97	5.49	122.3	10.5
Banking	na	2.79	3.02	3.21	3.41	3.48	3.66	NA	5.2

na Not available.

NA Not applicable.

p Preliminary.

¹ Excludes eating and drinking places.

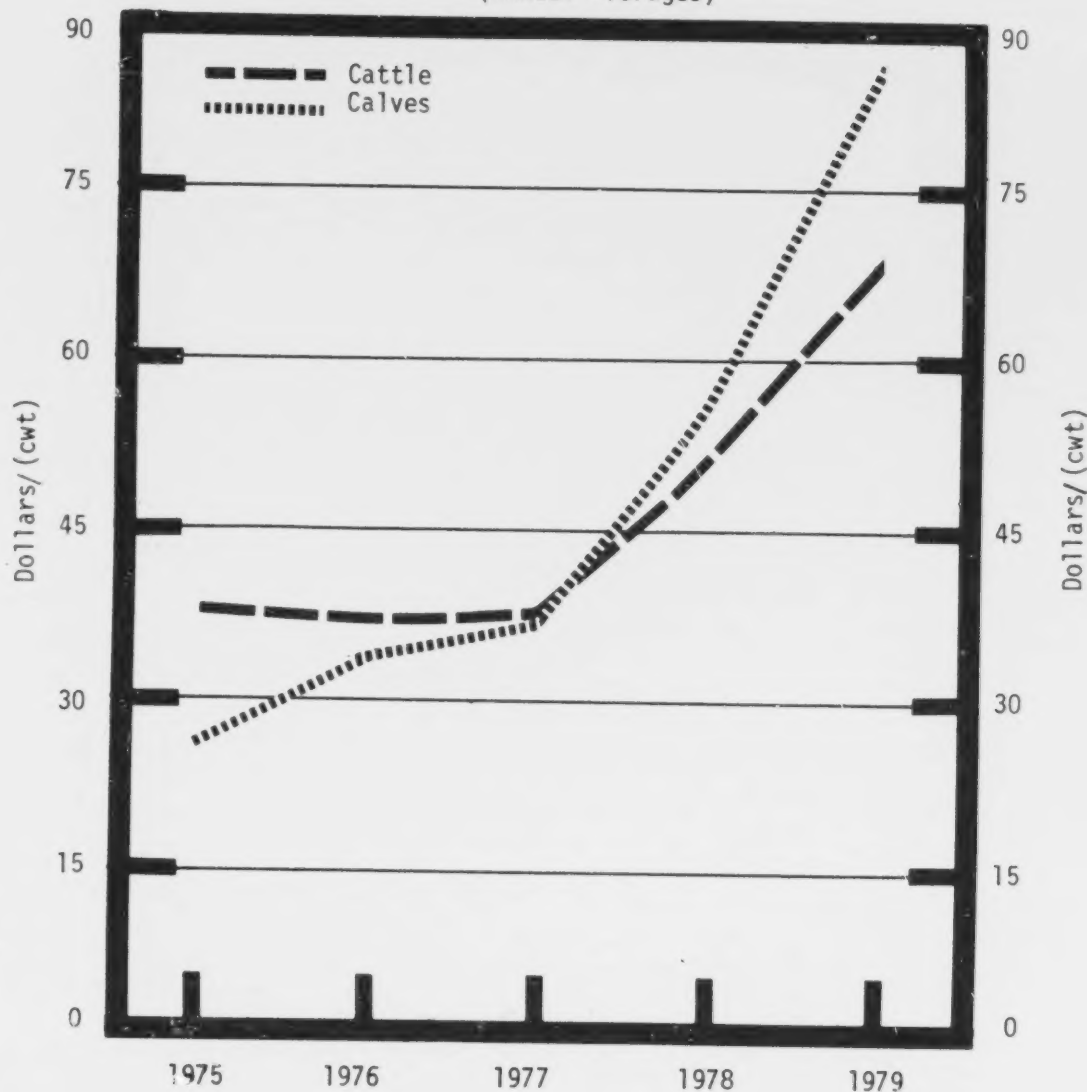
Source: New Mexico Employment Security Department; U.S. Department of Labor, Bureau of Labor Statistics.

AGRICULTURE

Constituting 78 percent of total farm product revenues, livestock continued to dominate the New Mexico agricultural scene in 1979. Although production was down in all categories, revenues for livestock increased 12.0 percent above 1978 levels because of rapidly rising prices. Unit prices for all livestock were up strongly in 1979.

Livestock production in New Mexico for 1979 reflected national trends. For example, beef production was down in New Mexico by 6 percent, with sheep and lamb products declining 3 percent; nationally, beef was down 13 percent, sheep and lamb, 2 percent. In spite of an overall decline in production, however, livestock revenues in-

PRICES RECEIVED FOR CATTLE AND CALVES
(annual averages)

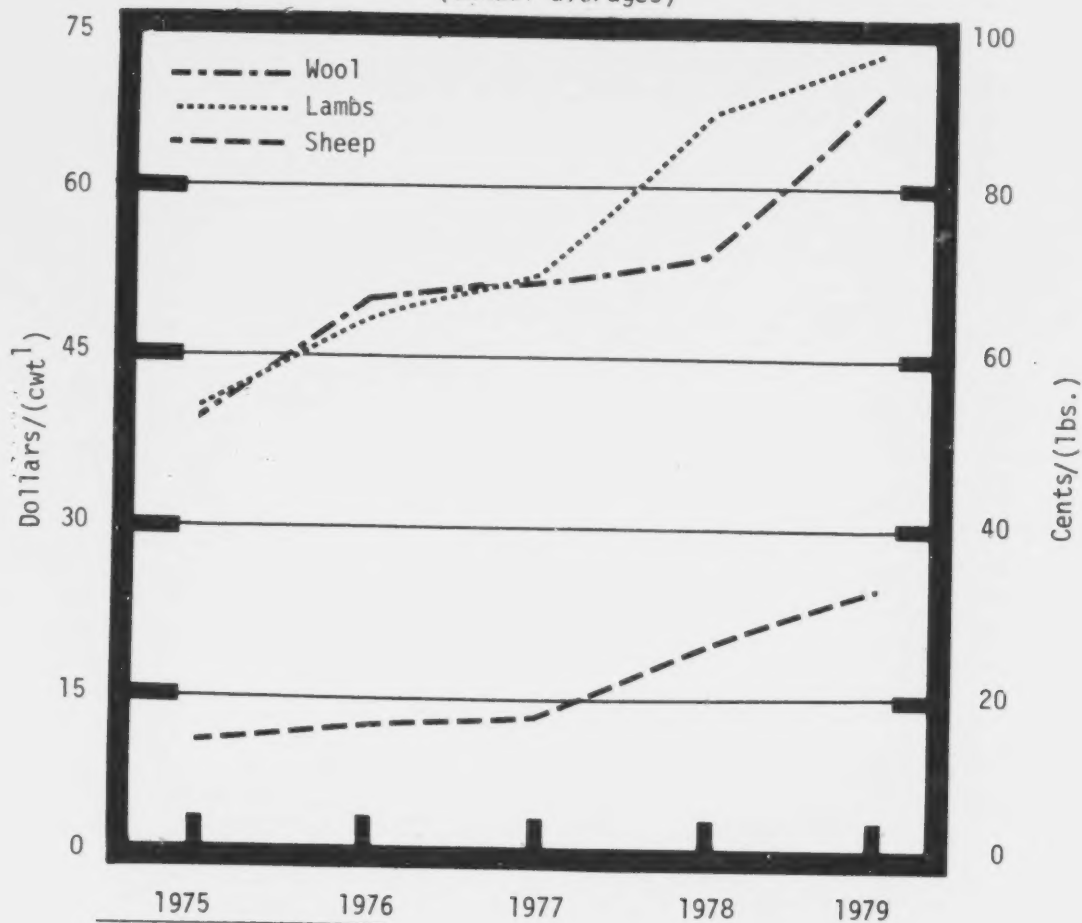


LIVESTOCK PRICES AND CASH MARKETINGS OF FARM PRODUCTS IN NEW MEXICO

	1969	1975	1976	1977 ²	1978 ²	1979 ²	% Change 1978-1979
PRICES TO FARMERS (Annual Averages)							
All Beef Cattle (per cwt.) ¹	\$ 27.63	\$ 37.63	\$ 37.38	\$ 37.83	\$ 51.20	\$ 68.92	34.6
Calves (per cwt.)	31.88	26.48	33.69	36.57	56.43	86.58	50.4
Sheep (per cwt.)	8.13	11.28	12.28	13.28	19.74	24.71	25.2
Lambs (per cwt.)	27.38	40.40	48.28	52.48	66.46	72.00	8.3
Wool (per lb.)	0.39	0.53	0.67	0.69	0.72	0.91	26.4
CASH MARKETINGS (Annual Totals) (in 000s)							
All Farm Products	\$397,361	\$725,713	\$698,756	\$790,826	\$964,262	\$1,083,078	12.3
Livestock	304,001	539,072	505,470	569,334	751,236	841,579	12.0
Crops	93,360	186,641	193,286	221,492	213,026	241,499	13.4

¹ Hundred weight.² Subject to revision.

Source: U.S. Department of Agriculture, Economic Research Service.

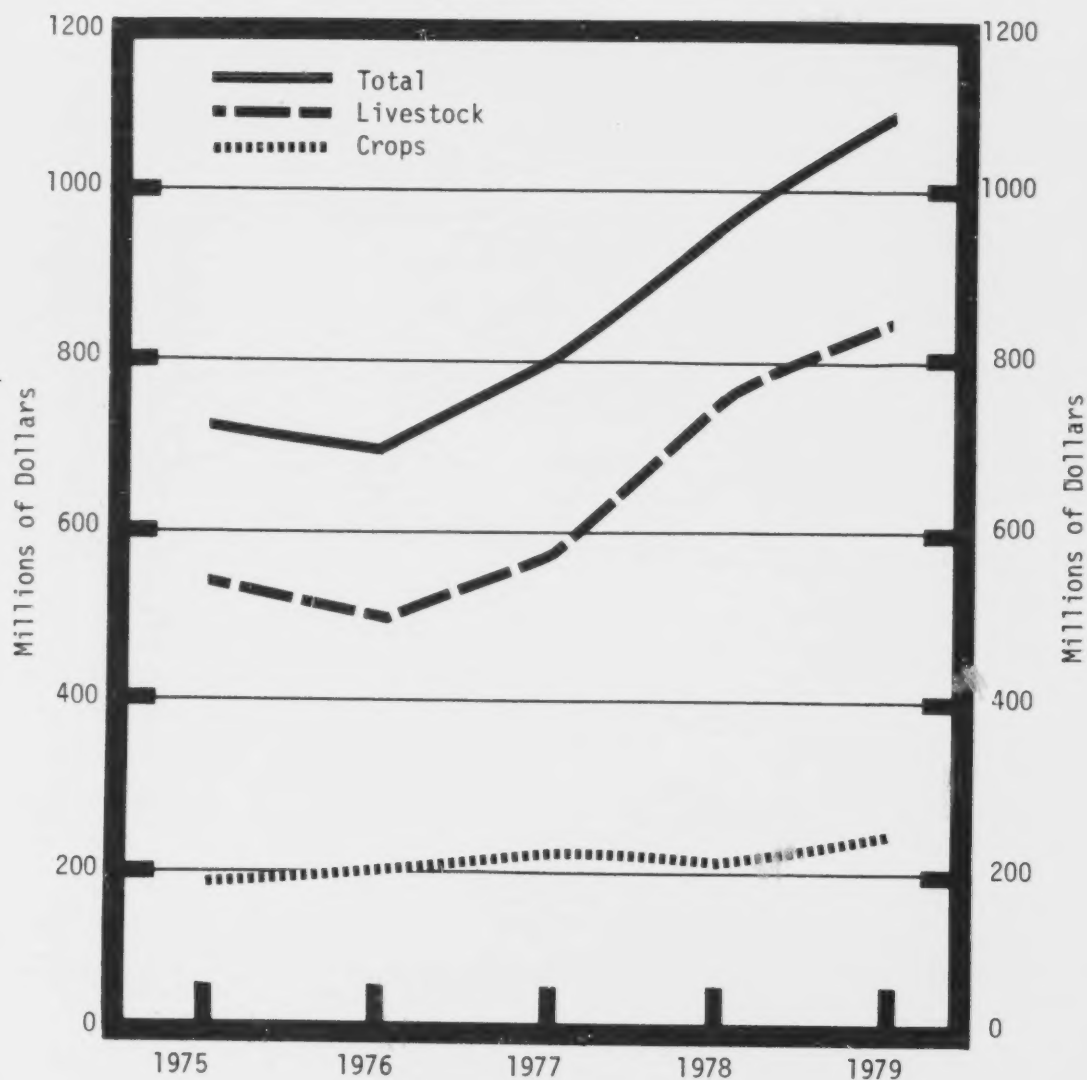
PRICES RECEIVED FOR SHEEP, LAMBS, WOOL
(annual averages)¹ Hundred weight.

creased at a rate comparable to the rise in the cost of living.

Although cotton acreage harvested was up 19 percent, total production increased only 4 percent, thus, reducing 1979 yield per acre by 12.4 percent. In contrast, U.S. cotton production and yield were up 37.3 and 31.2 percent, respectively.

Wheat production declined 22.6 percent compared to a 4.9 percent national increase. Corn production in New Mexico was down slightly (0.2 percent), while national harvests were up 9.2 percent. In spite of lower levels of production for many crops, total receipts were up 13.4 percent in 1979, following a 3.8 percent decline in 1978.

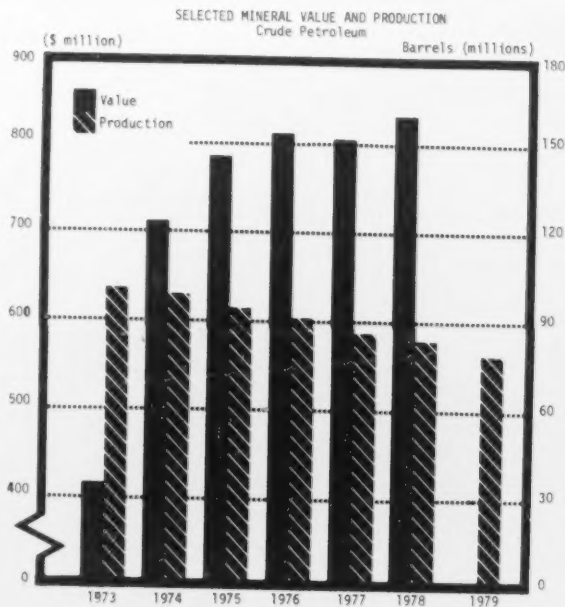
CASH RECEIPTS FROM FARM MARKETING
(annual totals)



MINING

Mining, like federal government, is a much larger share of the New Mexico economy than of the national economy. About one out of every 20 nonagricultural jobs in the state is in mining; nationally, mining accounts for less than one out of every 100 jobs. Of the 50 states, New Mexico ranks first in production of uranium, potash and perlite; third in copper; fourth in natural gas and pumice; seventh in petroleum; and fourteenth in coal. Minerals used as fuels are clearly dominant in terms of production value: natural gas, crude petroleum, natural gas liquids, uranium, and coal combined accounted for 85 percent of the value of 1978 state mineral production.

There have been several important developments which have affected and will continue to affect the production of energy minerals in New Mexico. For example, the rise in petroleum and natural gas prices has greatly increased the value of these products. Concern over the safety of nuclear power plants may affect the long-term outlook for the nuclear industry, and demand for uranium may weaken. The price of uranium in real dollars has already fallen off slightly during the last year. Furthermore, electricity conservation appears to be holding back the growth rate in electricity demand to about half that projected by most utilities. This, in turn, affects production of uranium and coal in New Mexico, which is used almost exclusively for electric power produc-



tion. It might be noted in this context that plans for a major new power plant in northwestern New Mexico have been shelved. Nevertheless, an expanding population in the Southwest will probably create an increasing demand for electricity in spite of conservation.

Other developments which may affect mineral production in New Mexico include the windfall

VALUE OF MINERAL PRODUCTION IN NEW MEXICO
(In thousands)

	1969	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
TOTAL	\$935,746	\$1,305,644	\$1,941,644	\$2,091,541	\$2,510,127	\$2,910,851	\$3,224,909	\$690,159 ⁱ	NA
Crude Petroleum	\$404,441	\$ 414,041	\$ 712,579	\$ 788,073	\$ 814,419	\$ 805,065	\$ 834,482	\$ na	NA
Natural Gas ²	155,924	287,889	390,861	493,059	695,501	974,408	1,160,108	na	NA
Copper	114,040	243,643	303,920	187,902	239,925	220,037	187,405	339,240	81.0
Potash	62,034	91,996	128,588	179,924	165,354	169,616	183,554	226,900	23.6
Natural Gas Liquids	54,790	106,876	174,326	167,357	231,946	286,299	298,313	na	NA
Uranium	69,887	59,410	104,693	127,829	191,271	260,037	328,182	na	NA
Coal	16,376	31,862	w	w	w	87,999	127,331	na	NA
Sand & Gravel	10,422	15,753	10,605	13,798	16,671	17,685	17,850	18,000	0.8
Perlite	4,493	5,024	6,306	6,400	8,403	9,543	12,510	14,072	12.5
Stone	3,286	5,894	8,359	4,683	4,394	4,892	6,271	6,207	-1.0
Zinc	7,098	5,094	9,897	8,592	w	w	w	w	NA
Silver	834	2,843	5,628	3,501	3,880	4,242	w	w	NA
Other	32,121	35,319	85,783	110,523	138,363	71,028	68,903	85,740	24.4

na Not available.

NA Not applicable.

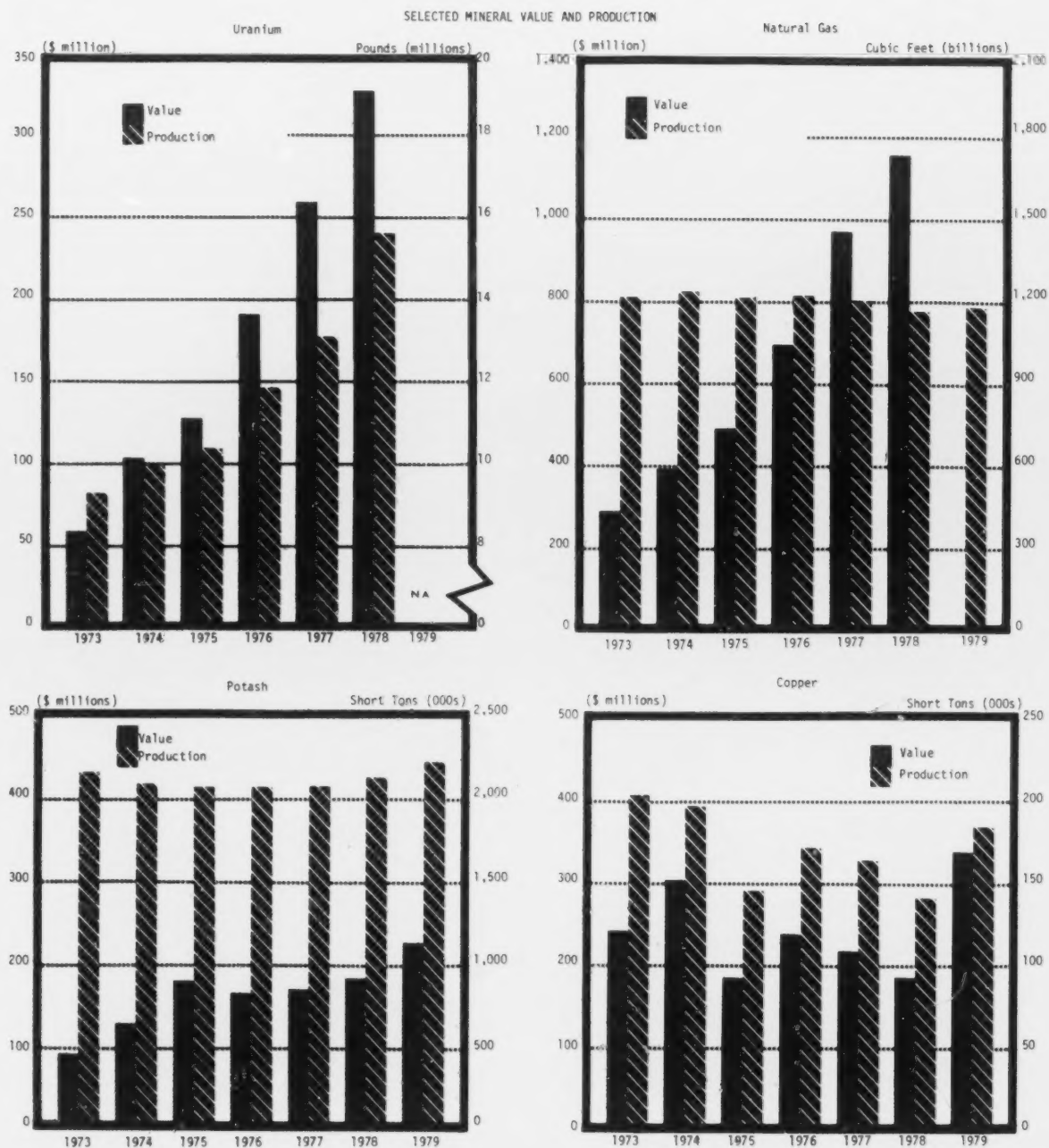
p Preliminary.

w Withheld to avoid disclosing individual company confidential data; included in "Other."

¹ Incomplete total, excludes the value of bituminous coal, natural gas, natural gas liquids, petroleum and uranium production.

² Value of marketed production, i.e., gross withdrawals less gas used for repressuring and quantities vented and flared.

Source: U.S. Department of the Interior, Bureau of Mines, annual reports; and the U.S. Department of Energy.



profits tax; advanced technologies for recovering and processing petroleum, natural gas, uranium, and coal; increased exportation of coal to other states and nations; environmental restrictions; and the rate of development of solar and geothermal energy resources.

The dollar value of all minerals produced in

New Mexico in 1978 (1979 figure unavailable) was 3.2 billion dollars. Natural gas production, which made up 36.0 percent of this total, has been decreasing slightly in recent years. Estimated 1979 production was 1,189 billion cubic feet or about 2 percent below the annual average for the period since 1972. However, this is within the

normal range considering production ups and downs during this period.

Petroleum is New Mexico's second most valuable mineral commodity and accounted for 25.9 percent of total value of state mineral production in 1978. Petroleum production has been steadily declining since 1972; 1979 was no exception. Production was just under 80 million barrels, within one percent of the expected value based on the post-1972 decreasing trend of 3.7 million barrels per year.

Production of natural gas liquids (e.g., gasoline, butane, and propane), on the other hand, has been steadily increasing by about one million barrels per year in recent years. Last year's level of 44.7 million barrels was, however, just below the 1977 high of 44.9 million barrels. Natural gas liquid products comprised 9.3 percent of the total value of 1978 mineral production in New Mexico.

Data on last year's uranium production has not yet been made available, but production since 1972 has followed a strong upward trend, increasing annually by 1.2 million pounds. On this basis, 1979 production would be expected to be about 16 million pounds. Uranium production in 1978 was valued at 10.2 percent of the total value of state mineral production.

Copper production has shown no significant upward or downward trend since 1970, but has been characterized by a great deal of year-to-year variation. The recent seven year average is 173 thousand tons, with 1979 comparing favorably at 184 thousand tons. Copper comprised 5.8 percent of state mineral production value in 1978.

Potash production reached 2.23 million tons in 1979. Since 1972, production has averaged 2.13 million tons with no significant trend either up or down. Potash production in 1978 had a value of 5.7 percent of the state total.

Coal production has been increasing since 1972 on an average of 800 thousand tons per year, bringing 1979 production to 13.7 million tons. Coal accounted for only 4.0 percent of the value of minerals produced in 1978, but this could change substantially in the near future if interstate coal shipments increase or coal gasification becomes economically feasible.

Concurrent with the increased attention focused on mineral commodities and energy resources in particular, real wages in mining have increased markedly since 1969. Even after accounting for inflation, hourly earnings in mining have increased from an average of \$7.31 in 1969 (1979 dollars) to \$8.23 in 1979, a gain of almost

SELECTED MINERAL PRODUCTION IN NEW MEXICO

	1969	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
Petroleum (crude) (000 42-gal. bbls.)	129,227	100,986	98,695	95,063	92,130	87,223	83,365	79,379 ²	- 4.8
Natural Gas ¹ (billion cubic ft.)	1,138	1,219	1,245	1,217	1,231	1,203	1,174	1,189 ³	1.3
Copper (000 short tons)	120	205	197	146	172	165	141	184	30.5
Potash (000 short tons, K ₂ O equivalent)	2,327	2,168	2,102	2,081	2,083	2,085	2,142	2,231	4.2
Natural Gas Liquids (000 42-gal. bbls.)	33,973	39,500	39,984	39,408	42,144	44,915	43,886	44,674 ²	1.8
Uranium (000 lbs., re- coverable content U ₃ O ₈)	11,811	9,286	9,971	10,393	11,880	13,167	15,628	na	NA
Coal (000 short tons)	4,471	9,069	9,392	8,785	9,760	11,083	12,632	13,730	8.7
Sand & Gravel (000 short tons)	8,574	10,641	7,413	6,220	7,702	8,604	8,239	8,000	- 2.9
Perlite (000 short tons)	398	478	480	429	481	521	576	572	- 0.7
Stone (000 short tons)	2,826	2,830	3,531	2,197	1,935	1,967	2,456	2,261	- 7.9
Zinc (000 short tons)	24	12	14	11	w	w	w	w	NA
Silver (000 troy ounces)	466	1,111	1,195	792	892	918	w	w	NA

na Not available.

NA Not applicable.

p Preliminary.

w Withheld to avoid disclosing individual company confidential data.

1 Marketed production, i.e., gross withdrawals less gas used for repressuring and quantities vented and flared.

2 Estimate based on 10 months of data.

3 Estimate based on 11 months of data.

Source: U.S. Department of the Interior, Bureau of Mines, Annual report; and the U.S. Department of Energy.

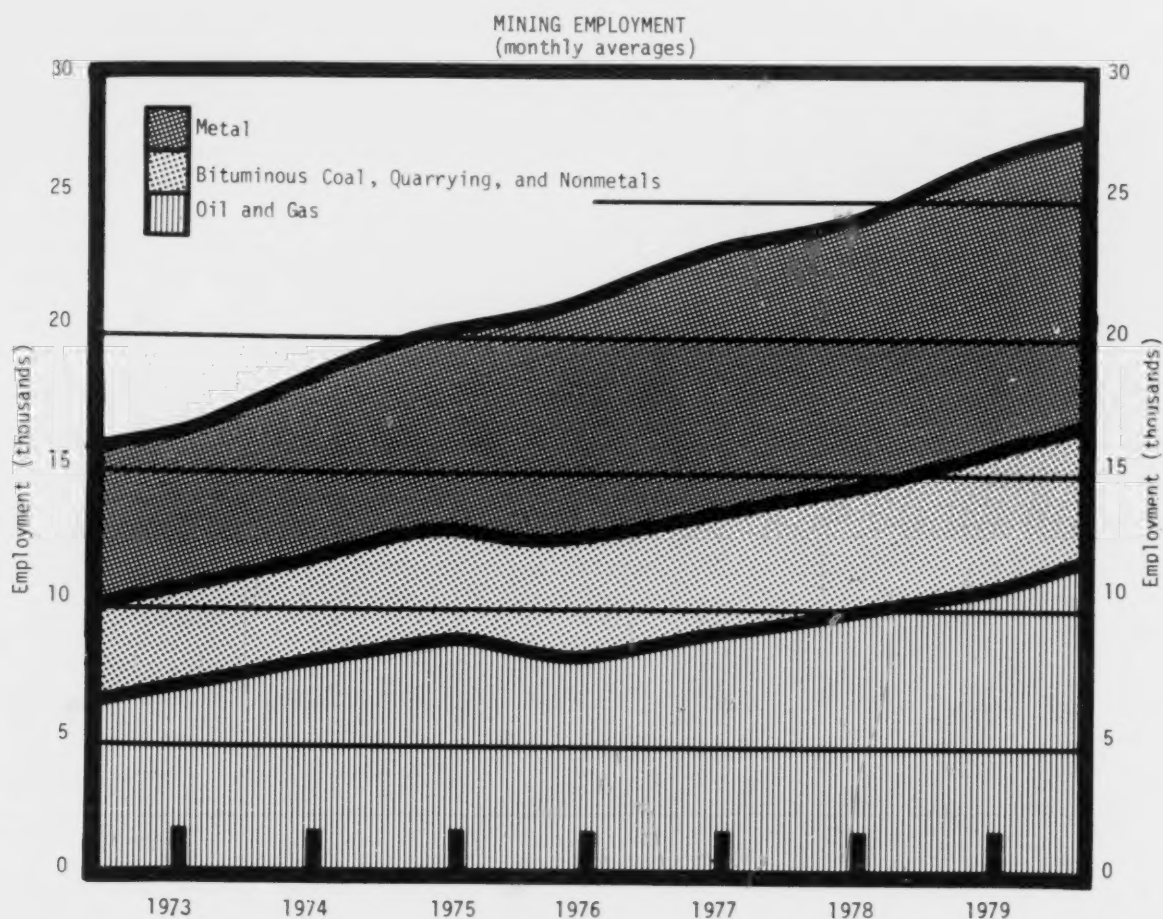
MINING EMPLOYMENT IN NEW MEXICO*
(monthly averages)

	1969	1973	1974	1975	1976	1977	1978	1979 ^P	% Change 1978-1979
TOTAL	17,300	16,500	18,700	20,300	21,600	23,400	24,500	26,700	9.0
Metal	6,300	5,700	6,700	7,300	9,000	9,800	9,900	10,900	10.1
Nonmetal	3,200	3,600	3,700	4,200	4,300	4,500	4,600	5,000	8.7
Oil & Gas	7,900	7,200	8,300	8,900	8,300	9,200	10,100	10,800	6.9
Average Weekly Hours	41.5	42.3	43.3	42.0	42.5	42.9	43.6	44.9	3.0
Average Weekly Earnings	\$153.04	\$188.40	\$215.11	\$237.92	\$264.58	\$291.72	\$324.40	\$369.39	13.9

* Detail may not add to total because of rounding.

p Preliminary.

Source: New Mexico Employment Security Department.



COMPARATIVE HOURLY EARNINGS BY SECTOR¹
NEW MEXICO

	<u>1969</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Mining ²	100	100	100	100	100	100	100
Construction	126	126	119	121	112	110	108
Manufacturing	71	67	64	65	65	64	65
Communications & Utilities	88	96	94	94	93	92	88
Trade	67	69	69	68	68	67	67
Banking	na	56	53	52	50	47	44

na Not available.

¹ Data not uniformly available for services, government (including public education), FIRE (finance, insurance, and real estate other than banking) and agriculture.

² Average hourly earnings of wage earners in the mining sector are used as a basis for the index presented in this table. Thus, mining earnings figures were divided into those for the other sectors to derive the percentages above.

Source: From the table "Average Hourly Earnings by Sector."

13 percent. The average annual wage in the mining industry was approximately \$19,200 in 1979 compared to \$15,800 in 1969. This rise in earnings was due, in part, to increased overtime. Comparison of this gain to changes in other sectors reveals that miners have also maintained or improved their wage relative to other wage earners. (See table, "Comparative Hourly Earnings by Sector".) Relative to the mining industry, no other sector improved its wage situation. Construction workers still have higher hourly earnings, but the wage differential between the mining and construction sectors has been reduced substantially.

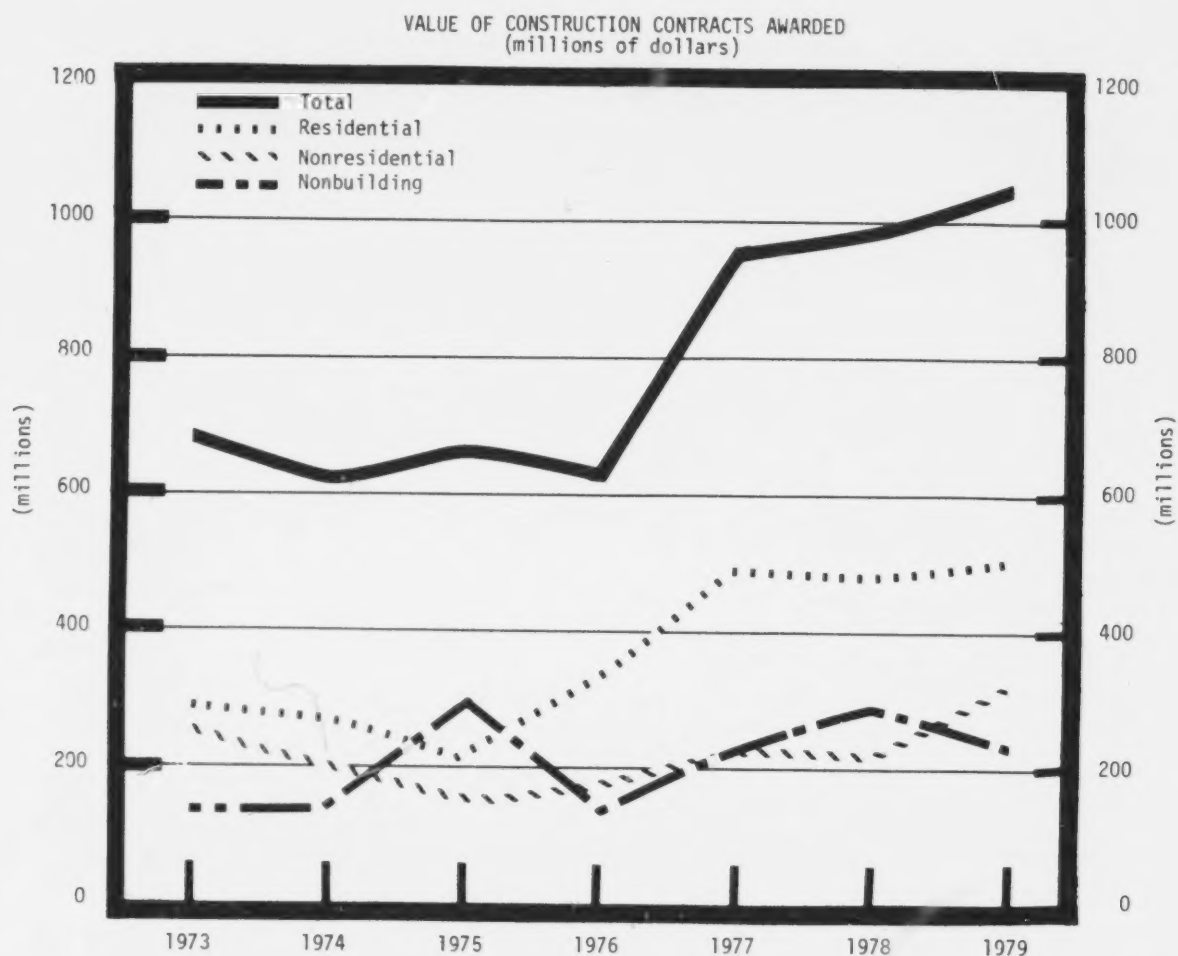
In general, 1979 was a good year for the mining industry in New Mexico. For example, mining employment grew by 2,200 jobs, or 9 percent, in 1979; during the last ten years, jobs in the mining sector have increased by 54.3 percent. Since 1969 mining employment in New Mexico has been increasing at about one thousand jobs per year with gains in all three subsectors—metals, oil and gas, and nonmetals. In addition, hours worked overtime have also been increasing. Thus, employment figures alone somewhat understate the actual level of activity in the mining sector during the last decade.

CONSTRUCTION

The construction sector in New Mexico demonstrated generally modest growth in 1979. The national economy teetered on the brink of recession throughout the year and inflation reduced the growth of real personal income in the U.S. and New Mexico. In October 1979, the credit-tightening policy imposed by the Federal Reserve Board drove conventional mortgage lending rates above 13 percent. Reduced personal income and high interest rates worked to slow construction activity, particularly in the residential area.

The value of residential construction contracts in New Mexico in 1979 grew only 4.2 percent (see Construction Contracts Southwestern States

and U.S.). Adjusting for inflation, residential contracts showed negative growth. However, activity in nonresidential construction improved in 1979. After a 5.7 percent decline in 1978, the value of nonresidential construction contracts in New Mexico expanded by 45.0 percent. Figures for construction employment reflect a slowdown resulting from declining consumer purchasing power and high interest rates. While employment showed tremendous growth of over 15 percent in 1978; it grew by only 2.5 percent in 1979. Adjusting for inflation, hourly earnings in this sector declined 3.3 percent.



CONSTRUCTION IN NEW MEXICO
(in thousands)

	1969	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
Total Contracts Awarded	\$282,327	\$677,241	\$615,422	\$660,221	\$631,056	\$955,790	\$986,534	\$1,045,586	6.0
Residential	82,133	285,792	268,810	216,446	332,882	496,149	479,447	499,718	4.2
Nonresidential	95,492	255,367	209,421	152,815	173,351	231,709	218,509	316,746	45.0
Nonbuilding	104,702	136,082	137,191	290,960	124,823	227,932	288,578	229,122	-20.6

^p Preliminary.

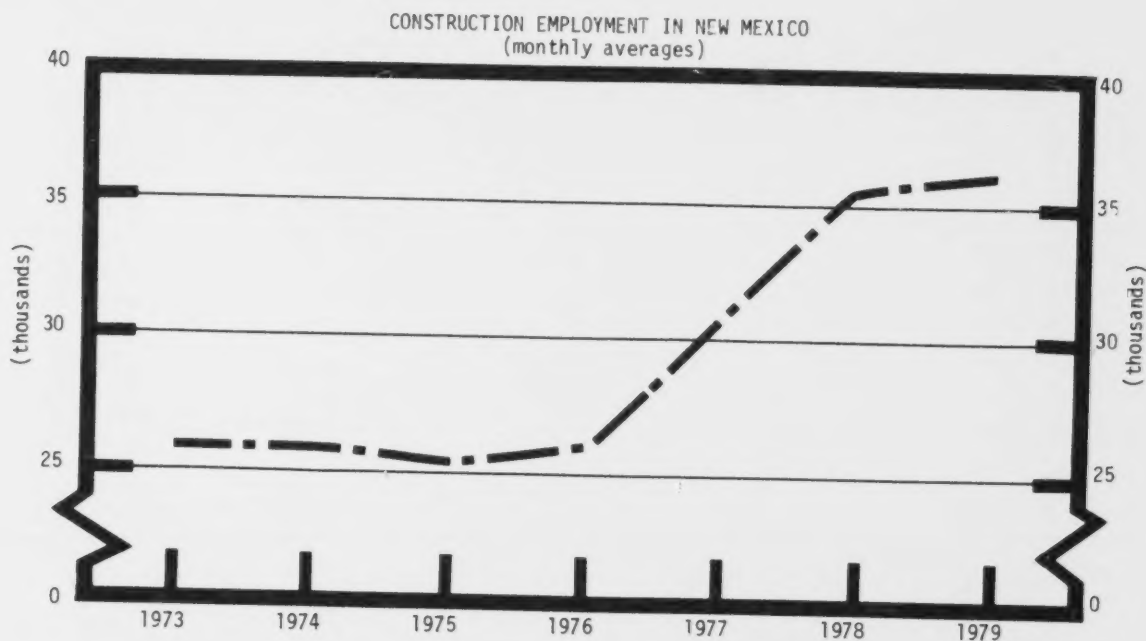
Source: F. W. Dodge Division, McGraw-Hill Information Systems Co.

CONSTRUCTION EMPLOYMENT IN NEW MEXICO
(monthly averages)

	1969	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
Construction	18,900	25,900	25,900	25,200	26,100	30,700	35,400	36,300	2.5

^p Preliminary.

Source: New Mexico Employment Security Department



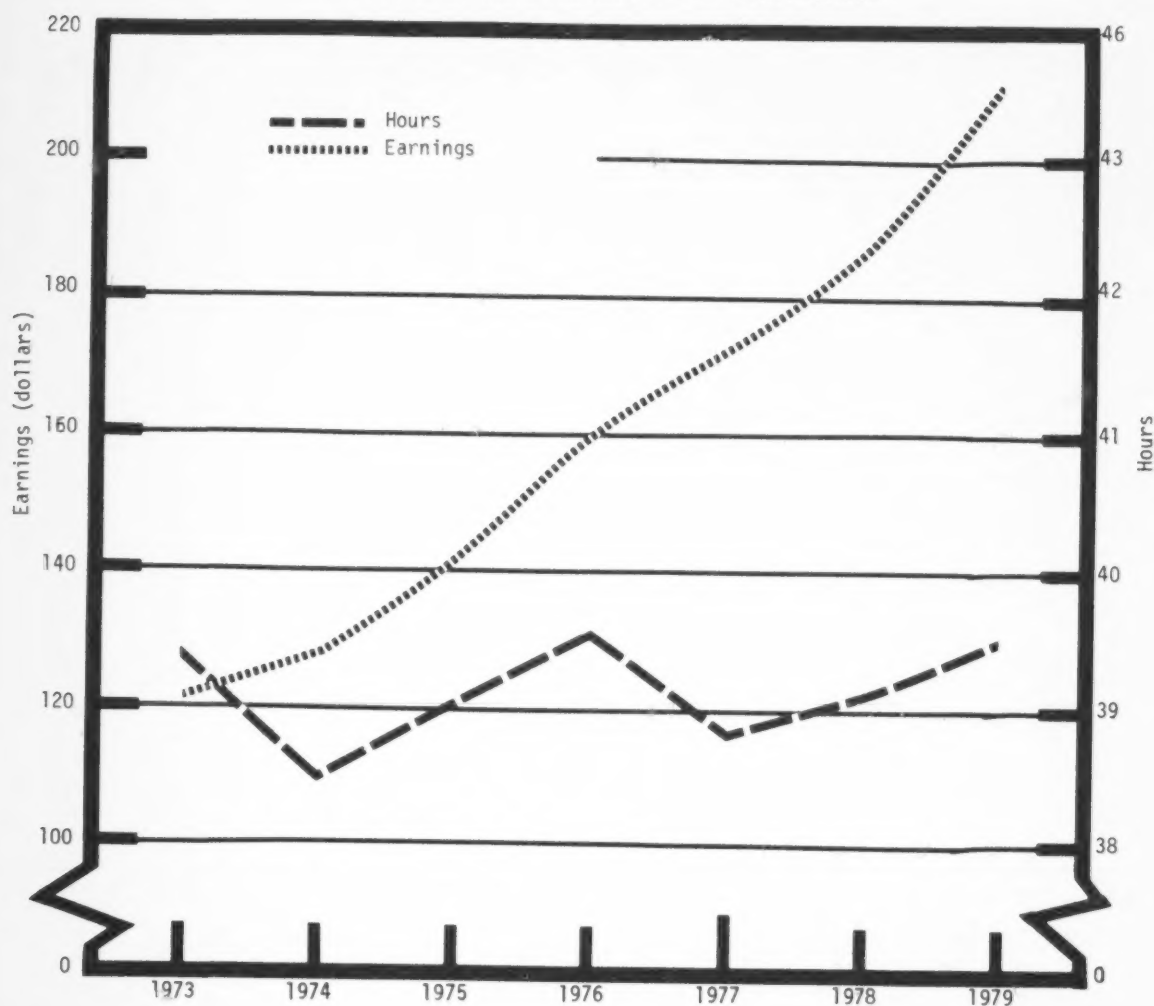
MANUFACTURING

Total employment in Manufacturing increased to 35,000 in 1979. Employment increases in the manufacture of durable goods exceeded employment growth in nondurable manufacturing by 3.5 points. Although there was no change from 1978 to 1979 in manufacturing employment in lumber or electrical equipment, employment in the manufacture of transportation equipment increased 34.6 percent. With the employment increases in the manufacture of other durable goods, total employment in durable goods' manufacturing grew 6.3 percent.

Employment in the manufacture of nondurable goods increased by less than 3 percent. The differ-

ential gains in durable versus nondurable manufacturing employment are also evident in the average hourly earnings. Not only are wages in durable goods' manufacturing higher, but the percent increase from 1978 to 1979 in average hourly earnings for durable goods was greater. In current dollars, average earnings in durable goods increased 11.5 percent; average earnings in nondurable goods, 10.0 percent. Comparing average hourly earnings for these sectors in constant dollars: earnings in durable goods increased slightly; earnings in nondurable goods decreased by 1.1 percent.

AVERAGE WEEKLY HOURS AND EARNINGS IN MANUFACTURING



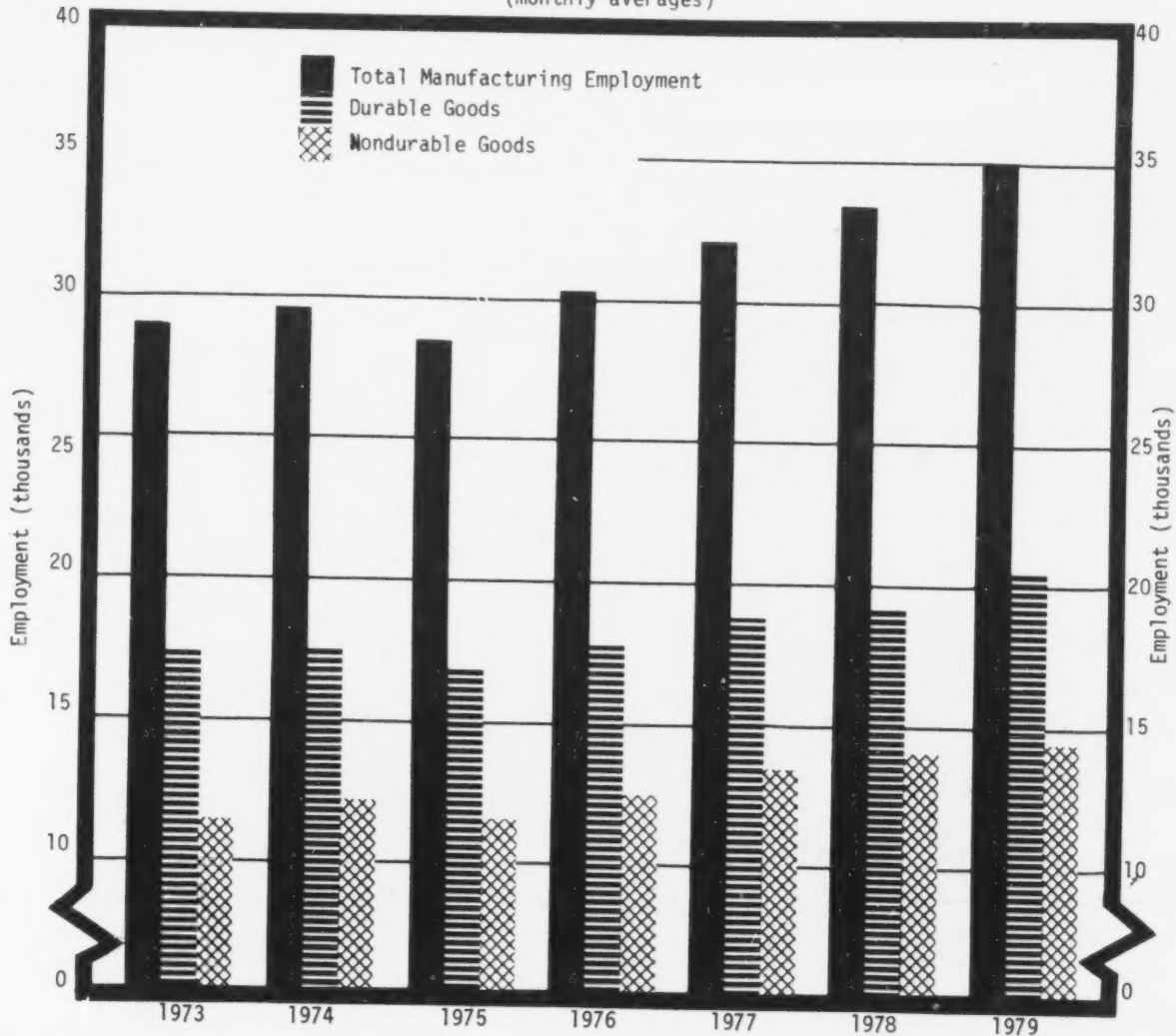
MANUFACTURING EMPLOYMENT IN NEW MEXICO*
(monthly averages)

	1969	1973	1974	1975	1976	1977	1978	1979 ^P	% Change 1978-1979
TOTAL	20,700	28,900	29,600	28,600	30,300	32,200	33,300	35,000	5.1
Durable Goods	12,200	17,400	17,500	16,900	17,800	18,700	19,200	20,400	6.3
Lumber	2,500	3,000	2,700	2,600	2,900	3,200	3,100	3,100	0.0
Electrical Equipment	3,000	3,700	3,700	2,900	3,100	3,300	3,700	3,700	0.0
Transportation Equipment	2,400	1,800	1,900	1,900	2,100	2,200	2,600	3,500	34.6
Other	4,200	8,900	9,400	9,500	9,700	10,000	9,800	10,200	4.1
Nondurable Goods	8,500	11,500	12,100	11,600	12,500	13,500	14,100	14,500	2.8
Food & Kindred Products	3,800	4,300	4,300	4,500	4,700	4,700	4,600	4,900	6.5
Textile & Apparel	1,400	3,400	3,800	3,000	3,200	3,600	3,900	3,900	0.0
Other	3,400	3,800	4,000	4,200	4,600	5,200	5,500	5,800	5.5
Average Weekly Hours	39.7	39.4	38.5	39.0	39.5	38.8	39.1	39.5	1.0
Average Weekly Earnings	\$104.17	\$121.31	\$126.95	\$141.60	\$160.44	\$171.88	\$187.40	\$210.63	12.4

* Detail may not add to total because of rounding.

^p Preliminary.

Source: New Mexico Employment Security Department.

MANUFACTURING EMPLOYMENT
(monthly averages)

TRANSPORTATION, COMMUNICATIONS AND UTILITIES

Preliminary data indicate that total employment in the transportation and communication sector increased 6.0 percent in 1979, representing a continuance of the pattern of steady growth in total TCU employment experienced in recent years. The increase in total employment in 1979 was due to substantial employment increases in nearly all subsector components.

In Transportation, rail employment continued to grow for the third consecutive year, increasing 3.3 percent from 1978 to 1979. Non-rail employment rose at an identical 3.3 percent rate. Although trucking and warehousing employment registered no increase, other transportation employment increased 8.6 percent.

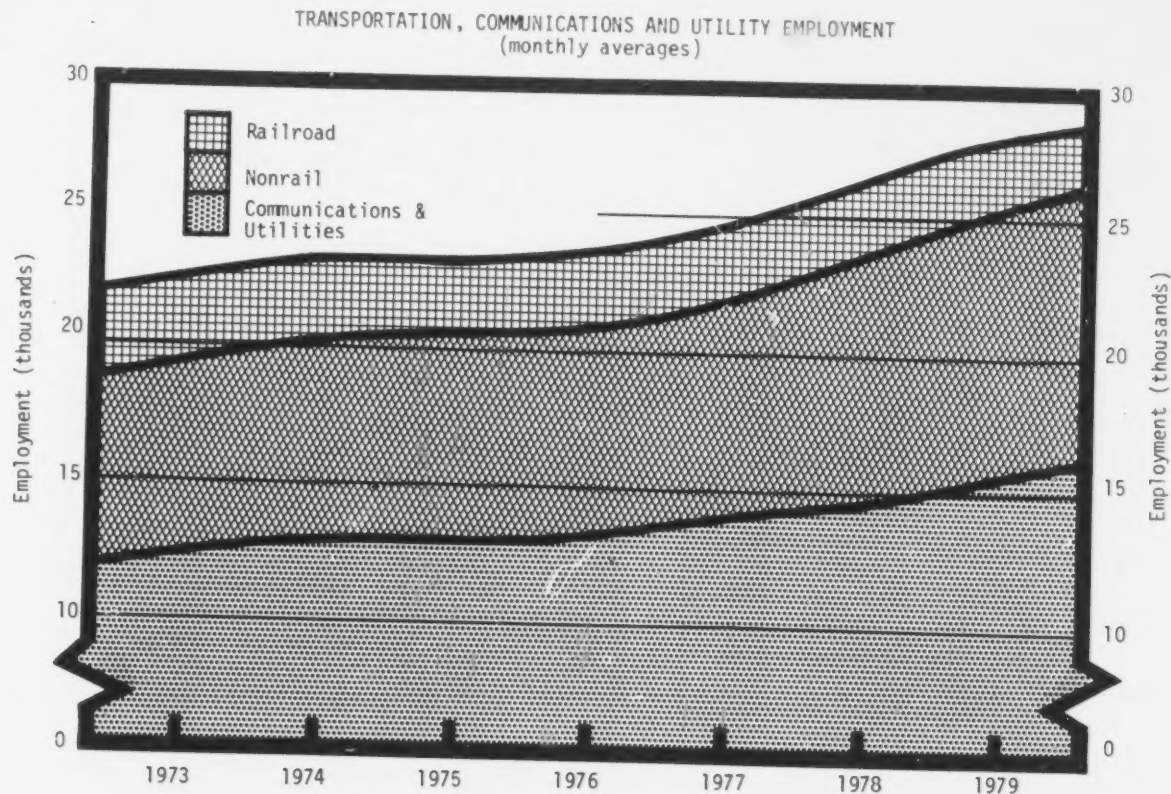
In Communications and Utilities, total employment reached a level of 15,700, reflecting an 8.3 percent increase in 1979. The largest gain in employment in this sector was recorded in commu-

nications which rose 9.2 percent while utilities registered a 7.5 percent increase.

With respect to wages, data available for the communications and utilities sector shows that persons holding jobs in this sector continue to earn higher average wages than employees in most other sectors. However, the 6.3 percent increase in average wages in this sector from 1978 to 1979 represents one of the smallest wage increases among the various sectors during this period.

In examining wages in real terms using constant 1979 dollars, average communications and utilities wages increased 13.2 percent during the ten-year period from 1969 to 1979, the highest such increase among all the sectors. In contrast, from 1978 to 1979 real average wages in this sector declined 4.5 percent.

Moving into the 1980s, as the national demand for various domestic energy sources increases,



development of New Mexico's uranium, coal, and other energy resources should increase the need for transportation services via the railroad and trucking industries. Projected population in-

creases for New Mexico will also place a greater demand on transportation services as well as on communication services and utilities, resulting in continued employment increases in these areas.

EMPLOYMENT IN TRANSPORTATION AND UTILITIES IN NEW MEXICO*
(monthly averages)

	1969	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
TOTAL	20,100	22,500	23,300	23,000	23,400	24,600	26,600	28,200	6.0
Rail	3,500	2,900	3,100	2,700	2,700	2,800	3,000	3,100	3.3
Nonrail	6,100	7,000	7,200	7,500	7,600	8,300	9,200	9,500	3.3
Trucking & Warehousing	3,500	4,200	4,300	4,500	4,600	5,100	5,700	5,700	0.0
Other Transportation	2,600	2,800	2,900	3,000	3,000	3,200	3,500	3,800	8.6
Utilities & Communications	10,500	12,600	13,000	12,900	13,100	13,400	14,500	15,700	8.3
Communications	4,800	6,400	6,400	6,100	6,100	6,100	6,500	7,100	9.2
Electric & Gas Utilities	5,700	6,200	6,600	6,800	7,000	7,300	8,000	8,600	7.5

* Detail may not add to total because of rounding.
p Preliminary.

Source: New Mexico Employment Security Department.

WHOLESALE AND RETAIL TRADE

Registering a 6.0 percent increase in 1979, employment in Trade continued to rise in New Mexico. Jobs in wholesale trade increased to 21,500, a gain of 7.0 percent compared to a 6.9 percent gain in 1978. However, the percentage

gain in retail employment fell from 6.1 percent in 1978 to 5.8 percent in 1979.

Average weekly hours worked in wholesale and retail trade have shown a steady decline during the last several years. In 1979, the percentage

WHOLESALE AND RETAIL TRADE EMPLOYMENT IN NEW MEXICO*
(monthly averages)

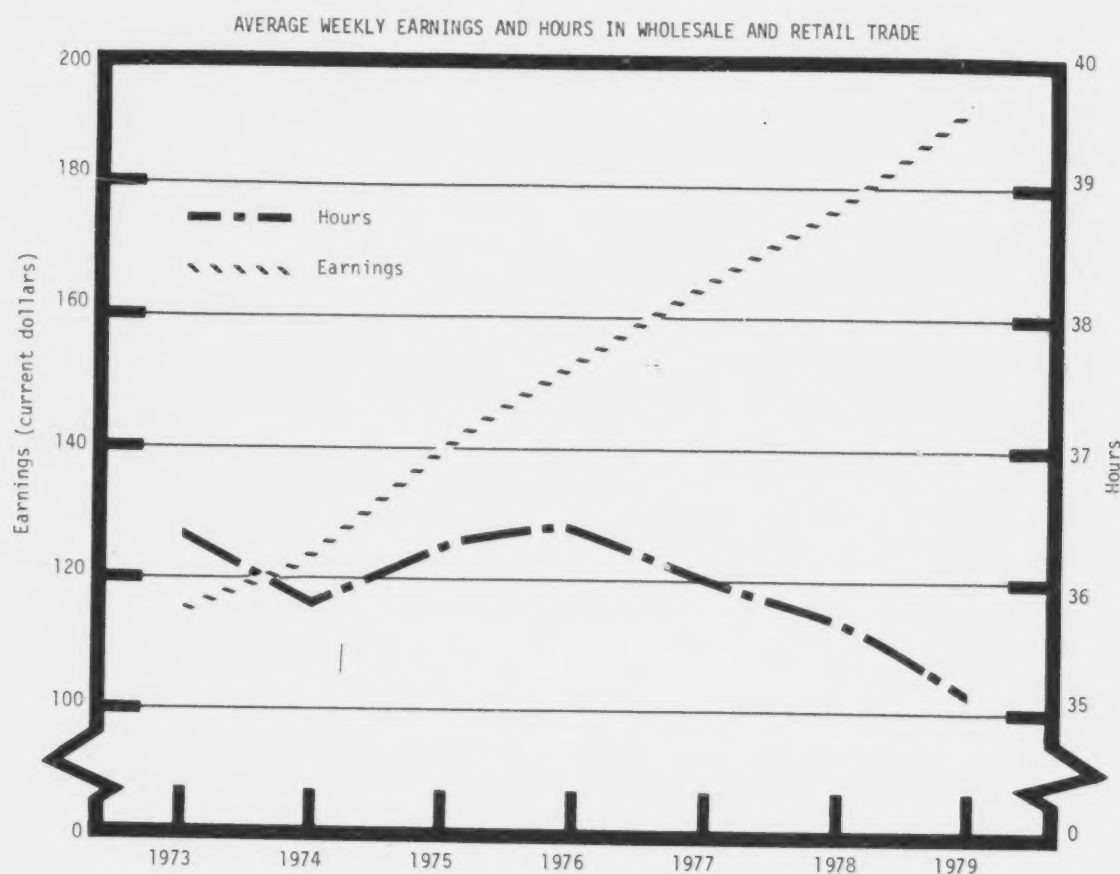
	1969	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
TOTAL	60,200	76,800	80,200	83,600	90,400	95,500	101,500	107,600	6.0
Wholesale	11,800	14,800	16,000	16,800	17,600	18,800	20,100	21,500	7.0
Retail	48,300	62,000	64,200	66,800	72,700	76,700	81,400	86,100	5.8
Average Weekly Hours ¹	36.9	36.3	35.8	36.2	36.4	36.0	35.7	35.1	-1.7
Average Weekly Earnings ¹	\$91.16	\$115.26	\$123.40	\$140.61	\$153.34	\$166.32	\$177.62	\$192.84	8.6

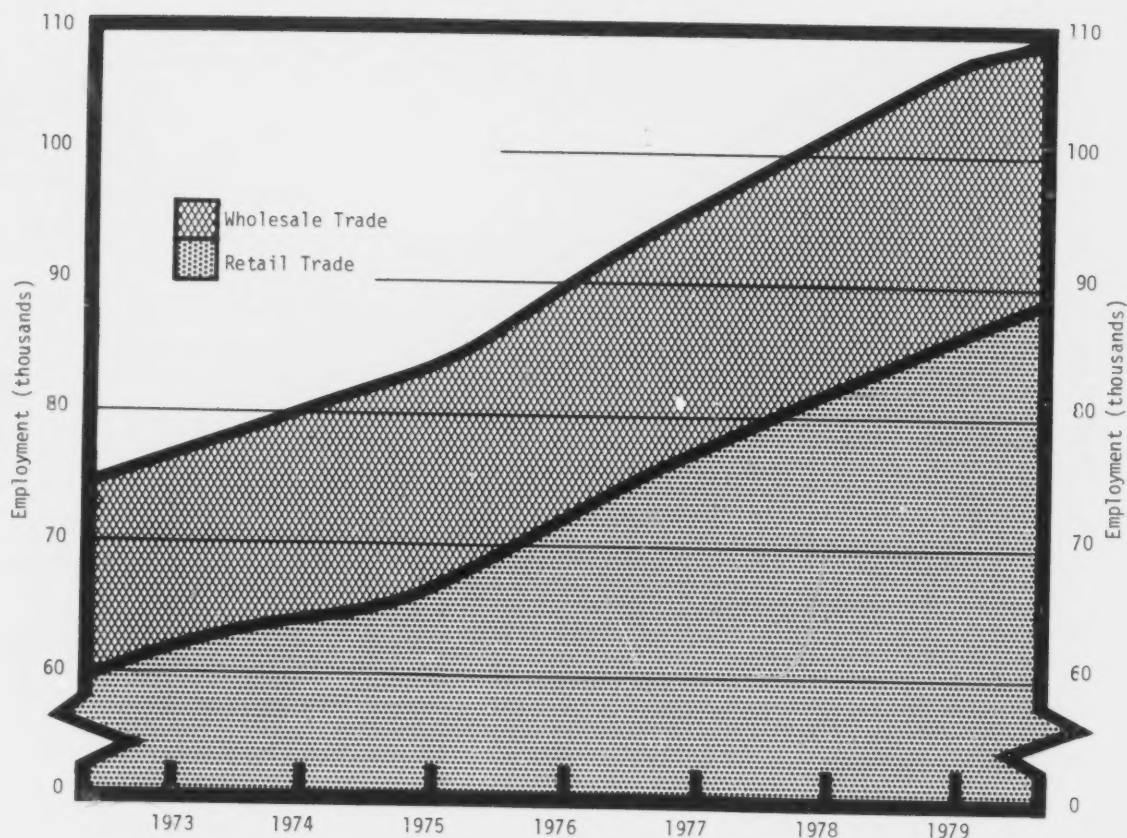
* Detail may not add to total because of rounding.
p Preliminary.

¹ Sectors combined, excluding eating and drinking places.
Source: New Mexico Employment Security Department.

decrease in work hours was 1.7, more than double the 0.8 percent decline in 1978. As the length of the workweek declined, average weekly earnings rose 8.6 percent in 1979 compared to an increase of 6.8 percent in 1978. However, earnings did not

keep pace with inflation as the purchasing power of the dollar fell. Using constant 1979 dollars, for example, average hourly wages in the trade sector declined 0.7 percent in 1979.



WHOLESALE AND RETAIL TRADE EMPLOYMENT
(monthly averages)

FINANCE, INSURANCE AND REAL ESTATE

Perhaps the most noteworthy development in financial markets throughout the United States during 1979 was a strong upward movement in interest rates. In the latter part of 1979, the Federal Reserve Board initiated a tighter policy on monetary growth, but consumers and businesses continued to demand large amounts of loans. Continued inflation and the demand for money

drove interest rates up even further. The impact of these factors has strained many financial institutions, even in regions where economic growth remains strong.

Total deposits of commercial banks in New Mexico increased 7.6 percent in 1979. This represents the smallest increase in deposits for any year during the 1970s. As many depositors switched to

money market instruments, treasury securities and interest-bearing transaction deposits, demand deposits increased only 0.7 percent compared to a 13.7 percent increase in 1978. Time deposits increased 12.0 percent, down from a 13.7 percent increase in 1978. Savings and loan deposits increased 14.0 percent in 1979, indicating a slowing trend in Savings and Loan growth since 1976.

Additional financial data suggests various implications regarding the New Mexico economy. On the one hand, total commercial bank debits increased 168 percent in 1979, indicating a strong economy and a large number of transactions (high velocity of money). New business starts were up 16.5 percent—a sluggish gain compared to 1978, but strong compared to 1973-1977. On the other hand, new loans made by banks were up only 2.6

percent, compared to 14.8 percent and 11.5 percent gains in 1977 and 1978, respectively. These data reveal a somewhat confusing state of the economy.

Total employment in Finance, Insurance and Real Estate in New Mexico increased 6.5 percent to 21,200 in 1979. Banking employment was up 4.6 percent—a small increase compared to increases during the previous three years. There were 3.8 percent more insurance carriers, agents and brokers in 1979 than in 1978. This is the smallest increase prior to 1974. In contrast, a significantly large increase was experienced in the Other Finance, Insurance and Real Estate category, where employment rose 9.6 percent—the largest increase prior to 1974.

FINANCIAL ACTIVITY
(monthly averages, \$ millions)

	1969	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
Banks¹									
Total Deposits ²	\$871.3	\$1,594.7	\$1,773.9	\$1,921.3	\$2,115.0	\$2,314.7	\$2,632.3	\$2,832.1	7.6
Demand	458.0	671.5	710.6	759.0	804.9	896.4	1,019.4	1,026.4	0.7
Time	413.3	923.2	1,063.3	1,162.3	1,310.1	1,418.3	1,612.9	1,805.7	12.0
New Loans & Discounts	89.2	168.5	178.1	172.3	194.7	223.5	249.2	255.8	2.6
Debits	897.2	1,551.2	1,914.2	2,098.3	2,309.1	2,645.7	3,221.4	8,632.6	168.0
Savings & Loan Associations									
Deposits	\$ na	\$ na	\$ na	\$ na	\$1,126.7	\$1,360.7	\$1,617.2	\$1,843.0	14.0
New Savings Received	na	30.8	32.7	43.0	49.5	66.7	96.5	132.1	36.9

ANNUAL TOTALS
(\$ millions)³

Miscellaneous									
Life Insurance Sales	\$ 507	\$ 776	\$ 872	\$ 919	\$ 1,038	\$ 1,281	\$ 1,488	\$ na	NA
Business Failures:									
Number	64	33	37	27	17	13	0	3 ⁴	NA
Liabilities	\$ 4.2	\$ 2.8	\$ 6.5	\$ 10.1	\$ 3.3	\$ 3.1	\$ 0	\$ 0.2 ⁴	NA
New Business Incorporations	960	1,706	1,689	1,690	1,830	2,080	2,590	3,018 ⁵	16.5

p Preliminary.

na Not available.

NA Not applicable.

1 Data obtained from reports of 36 individual banks.

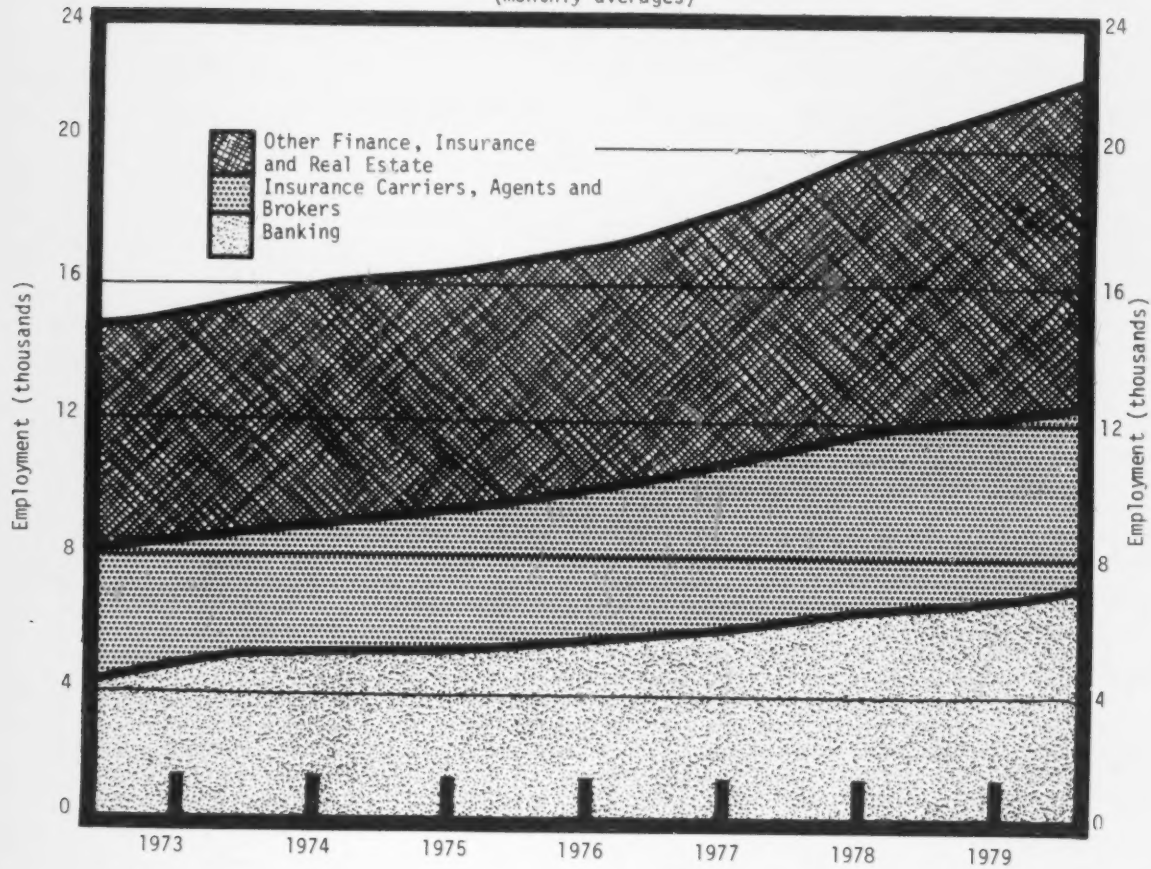
2 Excludes deposits of federal government.

3 Excludes number of business failures and new business incorporations which are reported as actual figures.

4 Total for first 8 months of the year.

5 Estimate based on available data.

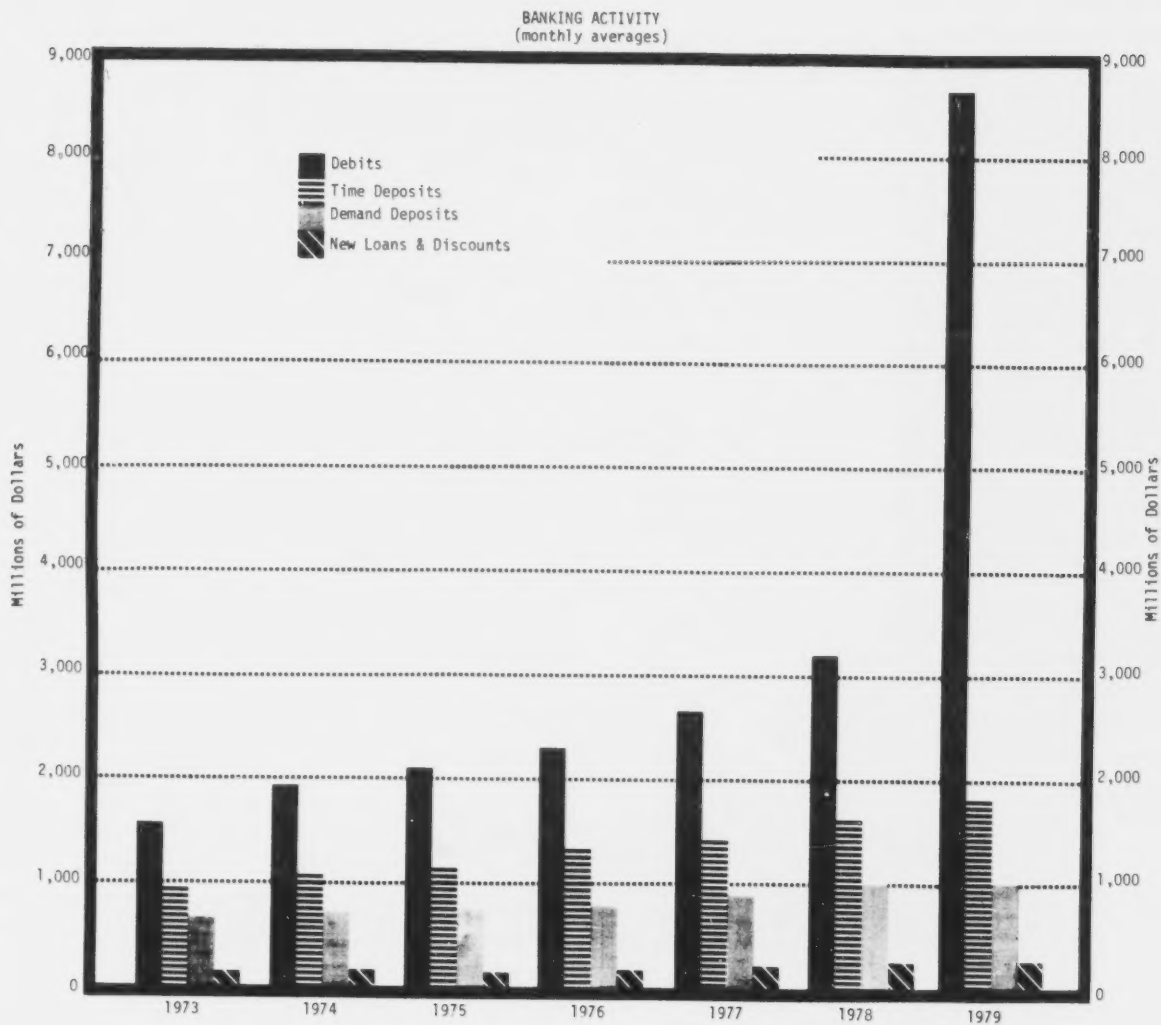
Sources: Reports from 36 individual banks; Federal Home Loan Bank of Little Rock; Life Insurance Fact Book, various issues; Dunn & Bradstreet Inc.

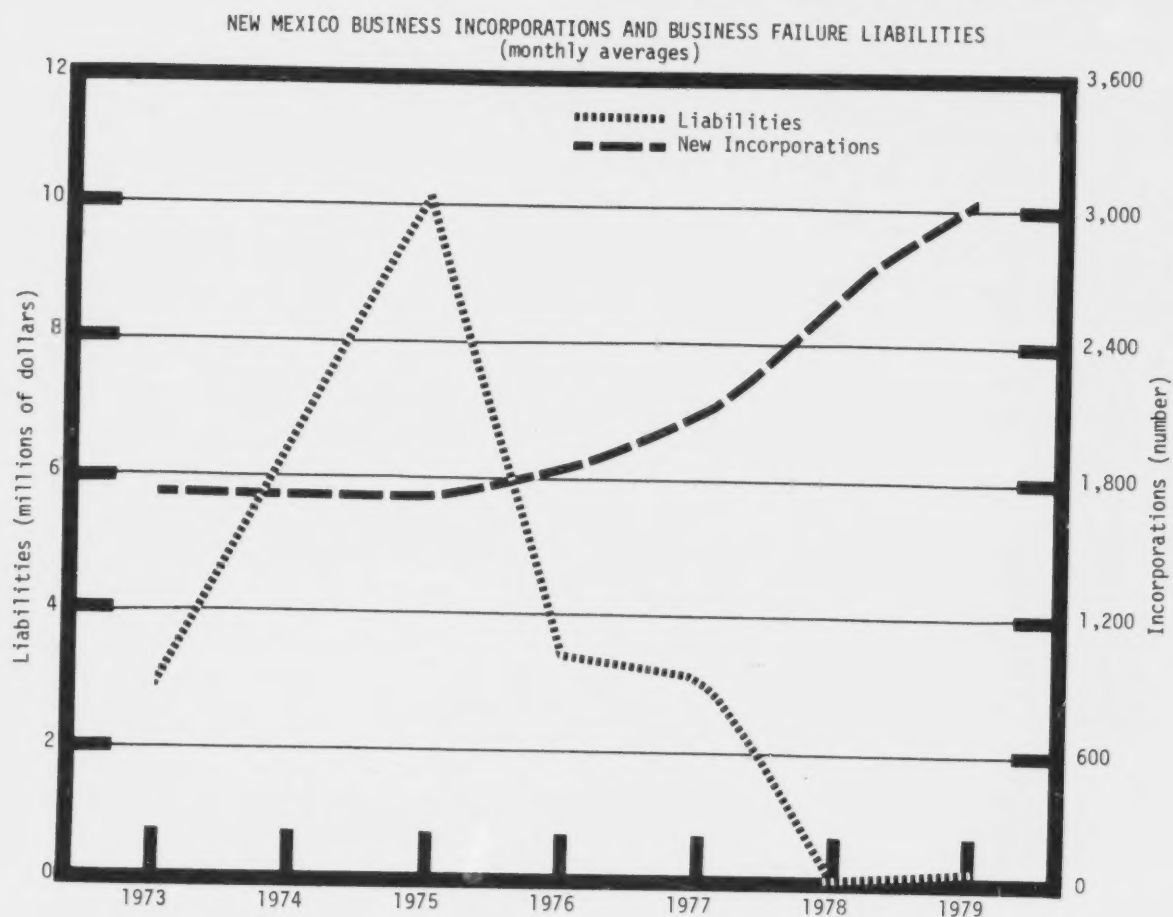
FINANCE, INSURANCE AND REAL ESTATE EMPLOYMENT
(monthly averages)FINANCE, INSURANCE AND REAL ESTATE EMPLOYMENT IN NEW MEXICO*
(monthly averages)

	1969	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
TOTAL	11,600	15,000	15,900	16,300	17,000	18,300	19,900	21,200	6.5
Banking	3,400	4,800	5,200	5,400	5,700	6,000	6,500	6,800	4.6
Insurance Carriers, Agents & Brokers	3,200	3,600	3,800	4,000	4,300	4,700	5,200	5,400	3.8
Other Finance, Insurance & Real Estate	4,900	6,600	6,900	7,000	7,000	7,600	8,300	9,100	9.6

* Detail may not add to total because of rounding.
p Preliminary.

Source: New Mexico Employment Security Department.





SERVICES, RECREATION AND TOURISM

Recreation and tourism impact the service sector primarily through lodging establishments. Although employment in lodging establishments increased in 1979, the gain was modest, at 1.1 percent. Similarly, employment of eating and drinking establishments did increase, by 6.2 percent, in 1979, but the growth was much slower in comparison to the previous five years.

Given the reduced growth in employment for

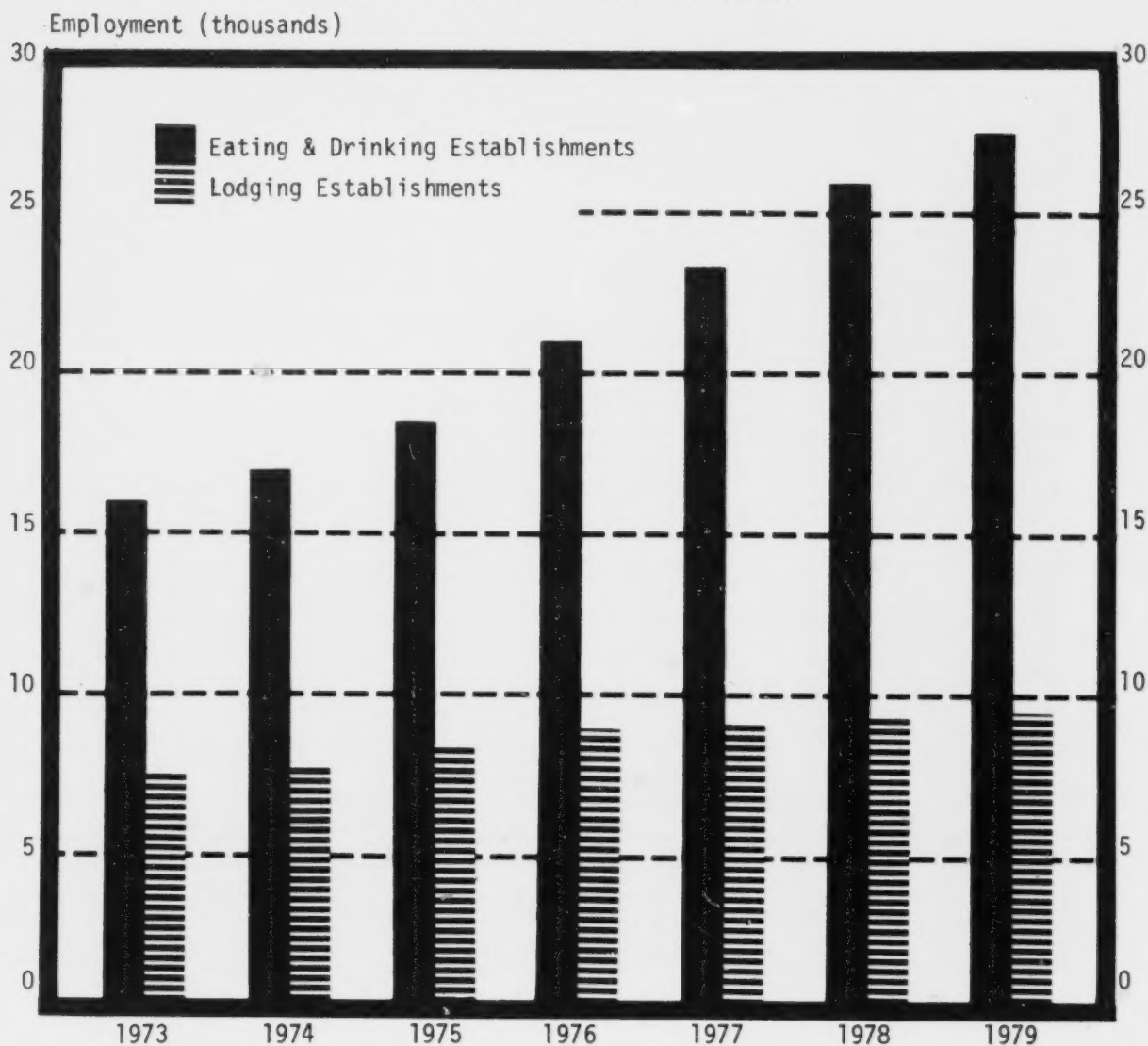
both lodging and eating and drinking establishments, a slowdown in the number of visits to national and state parks in New Mexico would be expected. From 1978 to 1979, the number of visits to national parks and monuments did, in fact, decline for the second straight year. The average percent decrease for 1979 was 3.8 percent. Only in the second quarter was an increase recorded in visits to national parks. However, the

number of visits to state parks increased 13.7 percent in 1979.

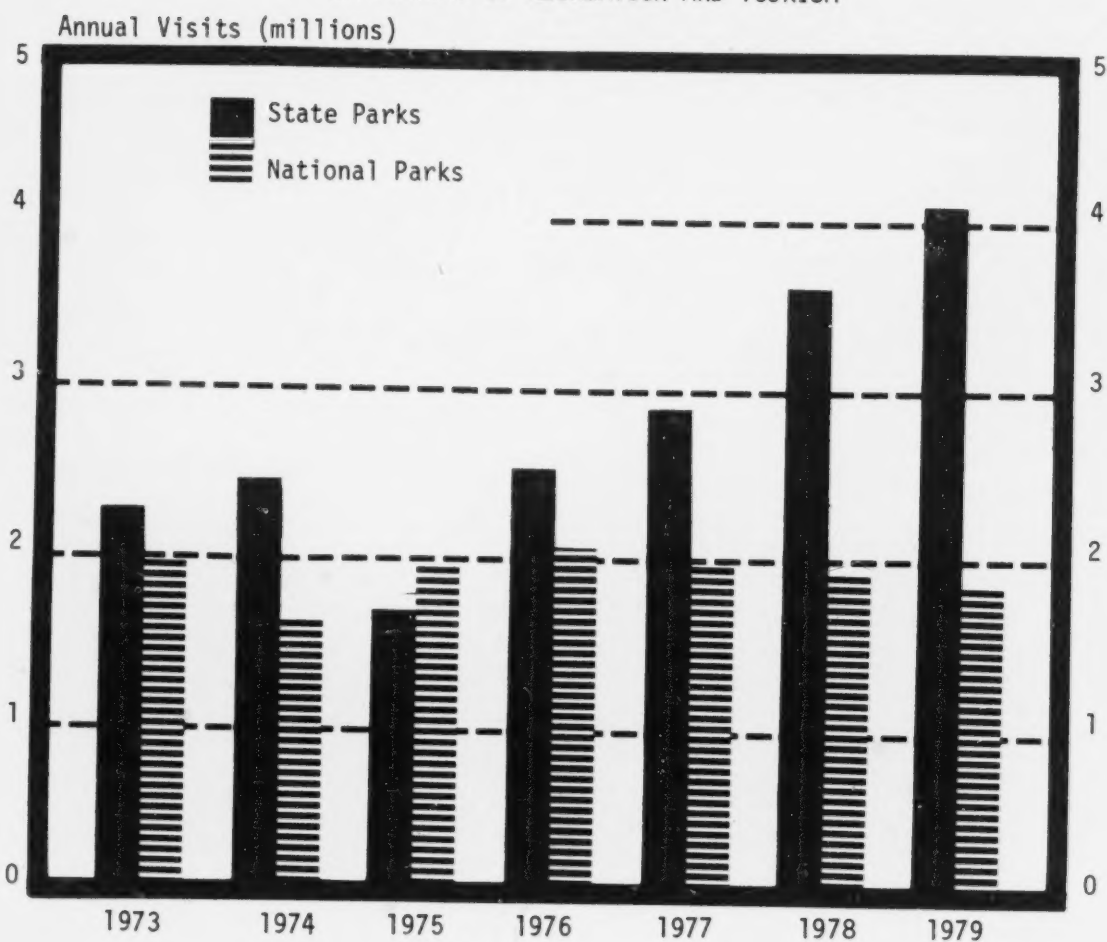
Total employment in Services continued to grow from 1978 to 1979. Unlike previous years, however, the rate of growth in total employment decreased in 1979. The annual average percent change in service employment had increased steadily to 9.5 percent in 1978. From 1978 to 1979, the percent change dropped to 1.9 percent.

Employment growth in each of the service sectors also decreased in 1979. The most dramatic shift was recorded in social services employment. Annual average percent change decreased by 39 percentage points, and social services employment dropped from 12,700 in 1978 to 11,000 in 1979. In each of the other service sectors, employment continued to increase—but at a reduced rate.

INDICATORS OF RECREATION AND TOURISM



INDICATORS OF RECREATION AND TOURISM

EMPLOYMENT IN SERVICES IN NEW MEXICO*
(monthly averages)

	1969	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
TOTAL	52,400	61,000	64,000	68,300	73,300	79,700	87,300	89,000	1.9
Lodging Establishments	5,700	7,400	7,700	8,300	8,900	9,000	9,200	9,300	1.1
Personal	4,800	4,500	4,400	4,300	4,300	4,300	4,500	4,700	4.4
Business	13,900	12,600	13,300	13,400	14,300	15,400	16,400	17,000	3.7
Medical	9,200	12,800	13,800	15,100	16,500	17,100	18,200	18,700	2.7
Social	5,700	6,200	6,100	7,100	7,900	10,100	12,700	11,000	-13.4
Nonprofit Organizations	1,600	2,600	3,000	3,900	4,100	4,800	5,600	6,200	10.7
Other	11,500	14,900	15,800	16,300	17,400	19,000	20,700	22,200	7.2

* Detail may not add to total because of rounding.

^p Preliminary.

Source: New Mexico Employment Security Department.

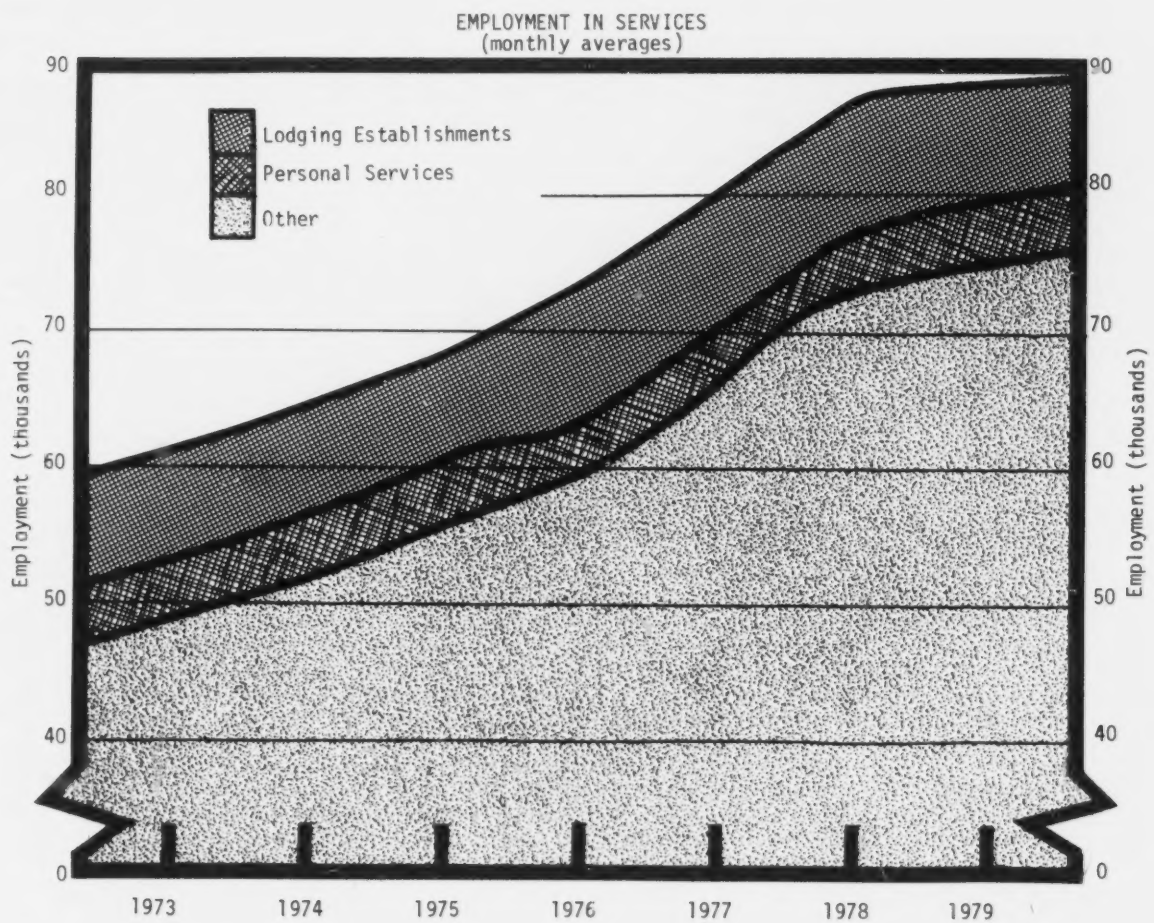
INDICATORS OF RECREATION AND TOURISM IN NEW MEXICO

	1969	1973	1974	1975	1976	1977	1978	1979P	% Change 1978-1979
AVERAGE MONTHLY EMPLOYMENT									
Lodging Establishments	5,700	7,400	7,700	8,300	8,900	9,000	9,200	9,300	1.1
Eating & Drinking Places	12,200	16,200	16,900	18,500	21,000	23,300	25,800	27,400	6.2
VISITS TO NATIONAL PARKS & MONUMENTS									
Annual Total	1,577,490	1,970,900	1,650,150	1,927,580	2,077,730	1,981,370	1,940,550	1,867,080	- 3.8
Quarterly Total: I	164,810	199,720	173,110	225,440	255,940	247,030	309,570	285,960	- 7.6
II	500,620	719,120	481,640	614,180	698,510	610,220	584,590	604,230	3.4
III	733,220	812,620	750,060	841,540	881,640	826,520	809,440	753,650	- 6.9
IV	178,840	239,440	245,340	246,420	241,640	297,600	236,950	223,240	- 5.8
VISITS TO STATE PARKS									
Annual Total	na	2,297,295	2,443,433	1,683,663	2,552,496	2,910,393	3,603,557	4,097,067	13.7

na Not available.

p Preliminary.

Source: New Mexico Employment Security Department; U.S. Department of the Interior, National Park Service; New Mexico Park and Recreation Commission.



GOVERNMENT

Government is the single largest employer in New Mexico and accounts for 121,700 jobs, or 26.1 percent of nonagricultural employment. Comparing 1978 to 1979, government jobs increased by 4.7 percent.

Federal employment grew 7.1 percent above the 1978 level—the largest increase for any year prior to 1973. This growth is largely attributable to continued high levels of funding in federal energy and defense projects. Employment in state government increased significantly (6.3 percent) but at a slower pace than in 1978 (7.5 percent). With 50,500 jobs, local government employment remained the largest of the three subsectors. There was a slowdown, however, in the rate at

which new local government employees were being hired, with 1979 employment exceeding that of 1978 by only 2.1 percent. This was the smallest percent increase in five years. The low level of growth in local government employment is attributable, in part, to the contraction of Comprehensive Employment and Training Act (CETA) funds.

In spite of the significant rise in federal employment in 1979, current levels are only 17.6 percent above those of 1969. In contrast, state and local government employment increased 53.9 percent and 55.4 percent, respectively, over the same ten-year period.

CIVILIAN EMPLOYMENT IN GOVERNMENT IN NEW MEXICO*
(monthly averages)

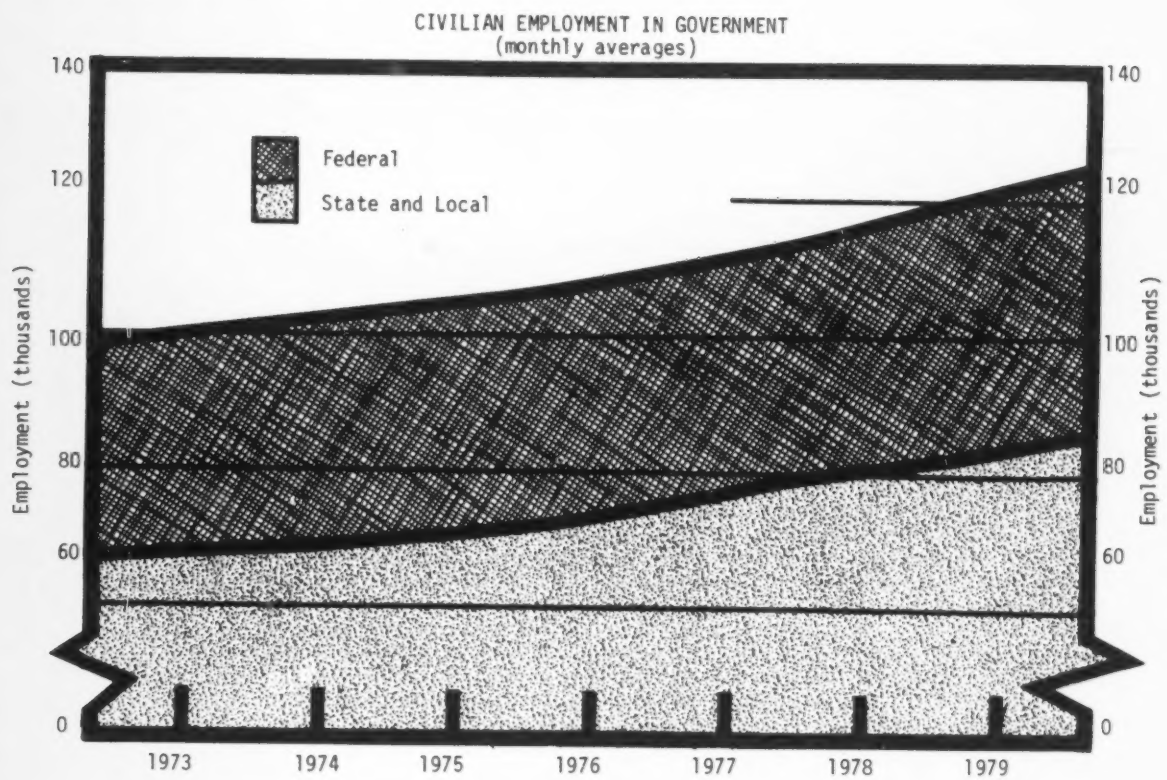
	1969	1973	1974	1975	1976	1977	1978	1979 ^p	% Change 1978-1979
TOTAL	86,300	99,500	102,500	104,700	108,000	111,000	116,200	121,700	4.7
Federal	31,900	31,700	33,400	33,700	33,900	34,300	35,000	37,500	7.1
State & Local	54,400	67,900	69,200	71,000	74,100	76,700	81,200	84,200	3.7
State	21,900	26,300	27,300	26,900	28,700	29,500	31,700	33,700	6.3
Local	32,500	41,600	41,900	44,100	45,400	47,200	49,500	50,500	2.1

* Detail may not add to total because of rounding.

na Not available.

p Preliminary.

Source: New Mexico Employment Security Department.



Errata

ERRATA FOR "THE HOUSING MARKET IN ALBUQUERQUE" IN DECEMBER NMB

p. 20, column 1, line 6 should read "... dissolution of marriage, and the *preference* of ..."

p. 25, Graph I, the legend should read:

Number of Building Permits Issued 

Number of Mortgages Filed 

Number of Residential Units Sold 

ERRATA FOR "CURRENT ECONOMIC DEVELOPMENTS"

p. 29, column 1, paragraph 1 should read "Bank debits in October were 144.1 percent (SA) *over* the same month in 1978."

ERRATA FOR "WOOD—A POPULAR FUEL IN NEW MEXICO" IN DECEMBER NMB

The ratio of energy values in Table 9 for Ponderosa pine burned in stoves in the Northern Border area appeared as 1.04 and all burners for this area as 1.06. The stove energy ratio for Ponderosa pine should have been 3.92, and all burners should have been 3.37.

ECONOMIC INDICATORS

	Quarterly Averages			
	1978	1979		
	Fourth Quarter	First Quarter	Second Quarter	Third Quarter
1. GENERAL				
Civilian Labor Force ¹ (000)	534.8	525.0	544.1	554.3
Seasonally Adjusted*	534.0	538.9	540.4	545.2
Total Employment ¹ (000)	506.0	493.5	514.4	524.0
Seasonally Adjusted*	504.5	508.9	510.5	514.2
Unemployment ¹ (000)	28.8	31.6	29.7	30.3
Seasonally Adjusted*	29.6	30.0	29.9	31.0
Unemployment Rate (%)	5.4	6.0	5.5	5.5
Seasonally Adjusted*	5.5	5.6	5.5	5.7
Weekly New Unemployment Insurance Claims	1,302.7	1,436.0	1,171.7	1,114.0
Seasonally Adjusted*	1,259.3	1,236.4	1,294.1	1,231.3
Nonagricultural Wage/Salary Employment ² (000)	455.4	449.9	465.8	471.6
Seasonally Adjusted*	454.5	458.4	463.0	467.0
New Business Incorporations	201.7	237.7	240.7	243.3
Business Failure Liabilities (000)	0.0	58.0	0.0	na
2. AGRICULTURAL RECEIPTS				
From Livestock and Products (\$ mil.)	126.5	45.0	47.8	48.5
Seasonally Adjusted*	62.2	66.9	57.9	na
From Crops (\$ mil.)	35.9	11.0	13.3	18.2
Seasonally Adjusted*	19.4	17.8	20.0	na
3. MINING PRODUCTION				
Petroleum (000 bbls.)	6,827.3	6,454.2	6,578.6	6,663.3
Natural Gas (bil. cu. ft.)	97.9	95.7	95.4	94.7
Seasonally Adjusted*	96.1	93.7	96.8	97.4
Copper Ore (000 tons)	11.9	13.8	16.6	15.8
Coal Production (000 short tons)	1,053.0	1,103.0	978.3	944.0
4. CONSTRUCTION				
Residential Building Permits (\$ mil.)	20.7	24.8	30.1	25.7
Seasonally Adjusted*	24.3	24.1	26.5	25.5
Residential Construction Contracts (\$ mil.)	34.8	40.2	48.8	40.5
Seasonally Adjusted*	41.7	38.1	43.0	41.0
Nonresidential Construction Contracts (\$ mil.)	25.0	16.1	26.0	28.5
Nonbuilding Construction Contracts (\$ mil.)	16.8	18.2	15.3	26.3
5. MANUFACTURING				
Employment ² (000)	34.1	34.1	35.1	35.1
Seasonally Adjusted*	33.6	34.8	35.3	34.8
Average Weekly Hours	38.9	39.6	39.5	39.0
Seasonally Adjusted*	38.4	39.9	39.8	39.1

ECONOMIC INDICATORS (continued)

September	1979		Percentage Change				Percentage Change		
	October	November	IV 1977- IV 1978	I 1978- I 1979	II 1978- II 1979	III 1978- III 1979	Sept. 78- Sept. 79	Oct. 78- Oct. 79	Nov. 78- Nov. 79
555.7	560.9	552.5	3.5	4.3	3.6	3.3	3.6	4.2	3.4
550.2	553.3	552.9	3.5	4.4	3.6	3.3	3.6	4.3	3.4
525.2	528.7	521.7	4.9	4.7	3.8	3.3	3.5	3.7	3.2
517.4	520.4	521.2	4.9	4.7	3.8	3.3	3.5	3.8	3.2
30.5	32.2	30.8	- 15.5	- 1.0	- 0.2	2.6	5.2	12.6	5.5
32.7	32.9	31.7	- 15.6	- 1.0	- 0.3	2.7	5.1	12.6	5.4
5.5	5.7	5.6	- 18.2	- 4.7	- 2.8	- 0.5	1.9	7.6	1.8
6.0	6.0	5.7	- 18.4	- 5.1	- 3.6	- 0.5	1.5	8.0	2.0
1,043.0	1,274.0	1,391.0	7.4	5.8	0.7	- 2.6	- 6.1	- 0.1	13.8
1,225.6	1,277.8	1,403.6	7.1	5.0	0.3	- 2.9	- 6.1	- 0.4	13.9
474.2	475.3	474.1	6.4	5.5	4.9	4.1	4.4	4.6	4.2
470.4	472.9	474.1	6.4	5.5	4.9	4.2	4.5	4.6	4.2
202.0	350.0	na	22.7	26.9	9.4	- 4.3	- 24.9	66.7	na
na	na	na	-100.0	NA	0.0	na	na	na	na
72.5	282.5	86.8	34.7	26.9	13.0	5.0	- 0.8	11.0	8.0
na	na	na	18.8	26.7	13.2	na	na	na	na
16.1	46.4	36.4	9.4	3.4	18.4	37.9	53.4	- 7.5	15.1
na	na	na	9.0	5.5	14.6	na	na	na	na
6,577.7	6,866.5	6,648.8	- 6.1	- 7.7	- 5.8	- 3.5	- 2.6	- 2.3	- 1.2
93.2	96.8	99.4	- 1.5	- 2.8	1.1	0.8	2.7	1.3	2.1
98.7	96.5	99.1	- 1.3	- 2.8	1.1	0.7	2.8	1.3	2.2
16.5	16.7	14.8	- 19.1	3.8	47.1	49.7	31.4	30.9	14.8
979.0	1,243.0	1,043.0	20.8	10.7	- 0.4	- 12.9	- 8.9	8.8	4.3
22.0	18.2	14.9	- 3.0	- 7.9	- 1.0	- 11.1	- 25.4	- 0.9	- 35.4
22.9	23.6	15.4	- 3.4	- 10.3	- 0.5	- 11.6	- 25.3	- 0.9	- 35.2
35.7	60.9	26.5	- 13.8	7.2	9.7	- 6.1	2.7	39.1	- 21.5
42.7	63.9	33.1	- 12.6	7.2	9.0	- 5.8	3.3	38.2	- 20.8
17.0	29.4	16.7	3.2	- 1.9	84.6	64.1	51.1	- 32.0	- 25.3
31.9	37.6	9.6	- 9.9	1.5	- 58.4	6.6	217.0	48.8	23.9
35.3	35.5	35.6	2.5	4.9	6.6	4.3	3.8	3.8	4.4
34.9	34.8	35.1	2.5	4.9	6.5	4.4	3.8	3.8	4.3
38.9	39.7	39.9	- 3.3	- 0.7	0.6	1.5	0.8	2.9	1.3
38.7	39.2	39.3	- 3.3	- 0.8	0.6	1.5	0.8	2.8	1.2

ECONOMIC INDICATORS (continued)

	Quarterly Averages			
	1978 Fourth Quarter	First Quarter	Second Quarter	Third Quarter
6. <u>TRANSPORT./COMMUNIC./UTIL.</u>				
Employment	27.9	27.9	27.9	28.0
7. <u>TRADE</u>				
Wholesale Employment ² (000)	20.7	20.8	21.3	21.7
Retail Employment ² (000)	83.9	82.5	85.7	87.9
Seasonally Adjusted*	83.2	85.3	85.6	86.0
Average Weekly Hours	35.4	34.5	35.2	35.7
8. <u>FINANCE</u>				
Bank Debits (\$ mil.)	3,470.6	5,907.3	10,958.6	8,518.1
Seasonally Adjusted*	3,519.4	5,997.3	10,891.2	8,423.4
New Bank Loans (\$ mil.)	267.5	235.1	255.7	270.9
Seasonally Adjusted*	258.9	235.5	259.5	283.3
Bank Demand Deposits (\$ mil.)	1,060.0	962.5	1,045.3	1,036.4
Bank Time Deposits (\$ mil.)	1,679.4	1,712.5	1,779.1	1,835.0
Total Savings Deposits (Savings and Loan Assoc.) (\$ mil.)	1,712.4	1,779.1	1,814.3	1,852.8
New Savings and Loans Received (\$ mil.)	101.1	118.2	115.4	148.1
9. <u>SERVICES AND TOURISM</u>				
Service Employment ² (000)	88.3	84.3	89.6	92.7
Seasonally Adjusted*	90.0	86.8	88.5	89.5
Lodging Employment ² (000)	9.1	8.9	9.6	9.8
Seasonally Adjusted*	9.5	9.4	9.5	9.0
Visits to National Parks/Monuments (000)	79.0	95.3	201.4	251.2
Seasonally Adjusted*	145.0	179.3	165.4	148.9
10. <u>GOVERNMENT</u>				
Federal Employment ² (000)	35.1	35.9	37.1	38.9
State Employment ² (000)	33.7	33.7	33.4	31.9
City and County Employment (000)	49.8	50.8	51.3	48.1

* Seasonally adjusted figures are economic time series which have had seasonal variations removed with statistical processes. These purely seasonal variations include the effects of: the opening and closing of schools, the annual pattern of seasons (especially applicable to agricultural data), holidays, and other annually recurring events which influence economic activity. By removing these seasonal variations from raw economic data, month-to-month analysis of trends and unusual fluctuations in economic activity is facilitated.

na Not available.

NA Not applicable, i.e., first quarter 1978 equals zero.

1 Number of persons by place of residence.

2 Number of jobs by place of work.

ECONOMIC INDICATORS (continued)

September	1979		Percentage Change				Percentage Change		
	October	November	IV 1977- IV 1978	I 1978- I 1979	II 1978- II 1979	III 1978- III 1979	Sept. 78- Sept. 79	Oct. 78- Oct. 79	Nov. 78- Nov. 79
28.8	28.8	29.1	10.2	8.7	6.6	4.4	4.4	4.0	4.7
21.7	22.0	22.1	6.7	8.2	7.0	6.5	6.4	6.8	6.8
88.3	87.3	88.0	5.8	6.6	5.4	5.7	5.8	5.6	5.4
86.5	87.3	87.8	5.8	6.5	5.4	5.7	5.9	5.6	5.4
35.5	35.3	34.9	- 1.1	- 2.9	- 1.3	- 1.5	0.3	0.0	- 0.6
6,297.9	9,140.2	8,177.0	27.9	86.0	272.7	158.3	101.0	151.6	131.1
7,182.0	9,045.0	8,266.0	27.6	86.8	273.5	154.5	108.9	144.7	129.3
264.9	261.7	254.2	10.4	- 0.1	1.3	12.2	13.9	- 7.9	- 1.9
305.0	251.4	253.5	10.8	- 0.0	1.3	13.2	19.8	- 11.6	- 2.9
1,047.3	1,037.0	1,033.0	10.6	0.1	3.7	- 1.1	- 1.5	0.6	- 2.2
1,854.0	1,895.6	1,887.5	10.8	10.8	12.4	12.3	12.9	13.0	13.9
1,880.7	1,908.3	1,926.0	18.0	17.0	14.7	12.1	12.0	12.5	12.8
122.7	200.3	137.3	44.0	24.1	26.1	51.1	32.2	81.4	43.5
90.9	89.9	88.9	8.0	2.2	2.5	1.9	1.6	1.6	0.8
90.3	90.7	90.9	8.0	2.2	2.4	1.9	1.6	1.6	0.9
9.7	9.2	9.0	5.5	4.4	3.7	- 1.7	- 1.0	- 1.1	0.0
9.2	9.3	9.5	5.5	4.3	3.7	- 1.6	- 1.0	- 1.1	0.0
123.7	91.0	67.0	- 20.4	- 7.6	3.4	- 6.9	- 8.0	- 15.1	- 5.4
145.1	142.6	132.9	- 23.0	- 11.7	9.1	- 6.2	- 8.4	- 11.5	- 9.1
38.6	38.2	38.0	2.2	5.2	5.4	9.6	9.4	9.1	8.0
33.5	35.7	35.8	12.1	10.0	6.7	1.8	2.8	6.9	6.2
50.3	51.7	51.7	1.8	2.0	2.0	0.1	3.1	3.8	4.0

Sources: New Mexico Employment Security Department: Sections 1,5,6,7,9,10; Dun and Bradstreet, Inc.: Section 1; USDA Statistical Reporting Service: Section 2; Oil Conservation Commission: Section 3; New Mexico Bureau of Revenue: Section 3; Building Inspectors' reports, 18 cities: Section 4; F.W. Dodge Co. (a division of McGraw-Hill, Inc.): Section 4; Federal Power Commission: Section 6; Bank report (36): Section 8; Federal Home Loan Bank of Little Rock: Section 8; United States Department of the Interior, National Park Service: Section 9.

NUMBER OF BUILDING PERMITS--SELECTED CITIES
RESIDENTIAL

	November 1978	November 1979	Cumulative Total Through		December 1978	December 1979	Cumulative Total Through	
			November 1978	November 1979			December 1978	December 1979
Alamogordo	13	3	179	139	15	2	194	141
Albuquerque	296	137	3,863	2,788	354	75	4,217	2,863
Artesia	3	2	45	80	6	4	51	84
Carlsbad	4	3	126	73	2	0	128	73
Clayton	1	0	14	16	0	0	14	16
Clovis	17	7	238	188	10	8	248	196
Deming	6	1	71	63	7	3	78	66
Farmington	21	25	353	349	11	15	364	364
Gallup	3	4	218	111	2	4	220	115
Grants	7	2	130	119	9	12	139	131
Hobbs	7	5	201	155	14	7	215	162
Las Cruces	11	19	485	384	16	7	501	391
Las Vegas	3	2	90	43	2	0	92	43
Lordsburg	1	0	2	3	0	0	2	3
Portales	4	1	40	41	1	0	41	41
Raton	3	5	30	28	2	3	32	31
Roswell	23	8	246	269	21	7	267	276
Santa Fe	51	14	639	521	16	21	655	542
Tucumcari	1	1	16	13	0	1	16	14
Total	475	239	6,986	5,383	488	169	7,474	5,552

Source: Individual reports by City Building Inspectors.

NUMBER OF BUILDING PERMITS--SELECTED CITIES
NONRESIDENTIAL

	November 1978	November 1979	Cumulative Total Through		December 1978	December 1979	Cumulative Total Through	
			November 1978	November 1979			December 1978	December 1979
Alamogordo	5	2	63	63	3	2	66	65
Albuquerque	15	17	195	233	12	25	207	258
Artesia	2	2	41	77	0	3	41	80
Carlsbad	1	2	18	20	1	3	19	23
Clayton	0	0	1	11	0	0	1	11
Clovis	5	2	30	35	4	5	34	40
Deming	0	3	11	9	1	0	12	9
Farmington	3	9	99	92	3	12	102	104
Gallup	2	2	33	31	0	1	33	32
Grants	2	5	37	23	1	0	38	23
Hobbs	4	7	44	32	6	2	50	34
Las Cruces	3	6	53	67	1	3	54	70
Las Vegas	1	0	1	9	0	0	1	9
Lordsburg	0	0	4	1	0	0	4	1
Portales	0	1	5	6	0	0	5	6
Raton	0	1	6	16	2	0	8	16
Roswell	8	6	126	104	6	3	132	107
Santa Fe	6	2	59	30	3	3	62	33
Tucumcari	0	0	6	5	0	1	6	6
Total	57	67	832	864	43	63	875	927

Source: Individual reports by City Building Inspectors.

VALUE OF BUILDING PERMITS--SELECTED CITIES
RESIDENTIAL

	November 1978	November 1979	Cumulative Total Through November		December 1978	December 1979	Cumulative Total Through December	
			1978	1979			1978	1979
Alamogordo	\$ 504,000	\$ 111,433	\$ 6,392,042	\$ 5,940,658	\$ 592,500	\$ 86,000	\$ 6,984,542	\$ 6,026,658
Albuquerque	14,824,371	8,714,377	112,973,789	166,994,043	14,997,256	3,585,145	187,971,045	170,579,188
Artesia	153,000	93,000	1,679,206	2,674,000	159,700	180,000	1,838,906	2,854,000
Carlsbad	179,300	71,100	6,247,785	2,521,382	42,500	0	6,290,285	2,521,382
Clayton	26,000	0	455,341	449,986	0	0	455,341	449,986
Clovis	439,636	202,134	6,564,114	5,389,359	339,169	253,578	6,903,283	5,642,937
Deming	163,350	25,000	2,829,010	3,178,700	242,610	128,000	3,071,620	3,306,700
Farmington	1,053,117	867,176	15,251,062	11,091,767	410,400	532,187	15,661,462	11,623,954
Gallup	143,160	222,469	6,047,874	5,887,209	78,000	157,023	6,125,874	6,044,232
Grants	364,600	90,400	4,789,163	4,188,587	511,250	604,100	5,300,413	4,792,687
Hobbs	360,000	2,177,500	9,151,800	9,059,750	630,000	393,000	9,781,800	9,452,750
Las Cruces	438,430	806,800	20,817,841	19,539,372	805,000	358,000	21,622,841	19,897,372
Las Vegas	67,935	54,380	2,233,621	977,453	41,827	0	2,275,448	977,453
Lordsburg	39,000	0	43,450	55,500	0	0	43,450	55,500
Portales	126,000	30,900	1,516,190	1,462,288	39,000	0	1,555,190	1,462,288
Raton	69,100	138,592	1,725,306	706,057	80,430	84,510	1,805,736	790,567
Roswell	770,700	340,000	11,553,419	10,208,675	1,129,125	278,000	12,682,544	10,486,675
Santa Fe	3,263,385	891,018	29,124,120	23,888,705	732,100	1,385,500	29,856,220	25,274,205
Tucumcari	35,000	29,260	422,067	362,260	0	35,000	422,067	397,260
Total	\$23,020,084	\$14,870,539	\$299,817,200	\$274,575,751	\$20,830,867	\$8,060,043	\$320,648,067	\$282,635,794

Source: Individual reports by City Building Inspectors.

VALUE OF BUILDING PERMITS--SELECTED CITIES
NONRESIDENTIAL

	November 1978	November 1979	Cumulative Total Through November		December 1978	December 1979	Cumulative Total Through December	
			1978	1979			1978	1979
Alamogordo	\$ 202,000	\$ 1,500	\$ 1,624,925	\$ 981,301	\$ 50,500	\$ 3,100	\$ 1,675,425	\$ 984,401
Albuquerque	19,938,630	5,561,346	61,769,359	67,963,389	1,511,552	5,572,167	63,280,911	73,535,556
Artesia	1,250	77,500	71,200	2,975,195	0	142,000	71,200	3,117,195
Carlsbad	9,100	4,075,000	1,466,350	5,915,540	64,000	991,856	1,530,350	6,907,396
Clayton	0	0	9,600	163,310	0	0	9,600	163,310
Clovis	433,156	200,968	1,591,369	1,875,127	139,441	96,950	1,730,810	1,972,077
Deming	0	291,225	749,051	1,519,125	25,000	0	774,051	1,519,125
Farmington	519,646	580,147	10,296,085	5,654,125	529,455	337,440	10,825,540	5,991,565
Gallup	283,200	59,751	3,274,470	5,617,531	0	4,400	3,274,470	5,621,931
Grants	215,000	388,444	8,408,360	1,887,144	17,000	0	8,425,360	1,887,144
Hobbs	136,300	650,000	3,766,775	5,508,010	2,053,670	333,000	5,820,445	5,841,010
Las Cruces	42,500	557,900	9,086,219	3,860,947	400	177,700	9,086,619	4,038,647
Las Vegas	2,000,000	0	2,000,000	1,469,659	0	0	2,000,000	1,469,659
Lordsburg	0	0	328,808	73,500	0	0	328,808	73,500
Portales	0	505,000	476,500	1,145,300	0	0	476,500	1,145,300
Raton	0	100,000	1,505,070	494,930	170,700	0	1,675,770	494,930
Roswell	192,200	22,377	2,149,330	1,637,688	694,650	3,900	2,843,980	1,641,588
Santa Fe	441,000	90,000	7,234,254	3,558,800	365,000	424,499	7,599,254	3,983,299
Tucumcari	0	0	448,692	1,628,002	0	18,600	448,692	1,646,602
Total	\$24,413,982	\$13,161,158	\$116,256,417	\$113,928,623	\$5,621,368	\$8,105,612	\$121,877,785	\$122,034,235

Source: Individual reports by City Building Inspectors.

ALBUQUERQUE¹ BANKING DATA
(\$000s)

	November 1978	November 1979	December 1978	December 1979	% Change	
					Nov. 1978- Nov. 1979	Dec. 1978- Dec. 1979
Bank Debits	\$2,544,174.3	\$6,831,501.7	\$2,247,954.6	\$8,898,033.7	168.5	295.8
New Loans & Discounts	120,281.8	119,703.0	118,834.1	146,376.9	- .5	23.2
Demand Deposits	538,571.4	533,691.6	567,170.9	568,541.5	- .9	.2
Time Deposits	827,471.6	937,973.9	847,386.9	947,512.0	13.4	11.8
Savings Deposits	773,300.0	872,300.0	781,600.0	880,500.0 ^p	12.8	12.7
(Savings & Loan Assoc.)						
New Savings & Loans Received	58,200.0	70,800.0	53,100.0	57,100.0 ^p	21.6	7.5

^p Preliminary.

¹ Bernalillo County for bank information, Albuquerque SMSA for Savings & Loan data.

Source: Five reporting banks and Federal Home Loan Bank of Little Rock.

CONSUMER PRICE INDEX (REVISED URBAN WAGE EARNERS AND CLERICAL WORKERS)
AND INDEXES OF SELECTED CATEGORIES
U.S. CITY AVERAGE
(1967=100)

	1977	1978	1979	% Change		Dec. 1978	Dec. 1979	% Change Dec. 1978- Dec. 1979
				1977- 1978	1978- 1979			
ALL ITEMS	181.5	195.3	217.7	7.6	11.5	202.9	230.0	13.4
Food	192.2	211.2	234.7	9.9	11.1	219.3	241.8	10.3
Housing	186.5	202.6	227.5	8.6	12.3	211.2	243.6	15.3
Apparel and Upkeep	154.2	159.5	166.4	3.4	4.3	163.3	171.4	5.0
Transportation	177.2	185.8	212.8	4.9	14.5	193.1	228.3	18.2
Medical Care	202.4	219.4	240.1	8.4	9.4	228.0	251.7	10.4
Entertainment	157.9	176.2	187.6	11.6	6.5	181.0	191.5	5.8
Other Goods and Services	159.4	183.2	196.3	14.9	7.2	188.4	203.0	7.7

Source: U.S. Department of Labor, News.

CONSUMER PRICE INDEX (ALL URBAN CONSUMERS) AND INDEXES OF
SELECTED CATEGORIES
U.S. CITY AVERAGE
(1967=100)

	1977	1978	1979	% Change		Dec. 1978	Dec. 1979	% Change Dec. 1978- Dec. 1979
				1977- 1978	1978- 1979			
ALL ITEMS	181.5	195.4	217.4	7.7	11.3	202.9	229.9	13.3
Food	192.2	211.4	234.5	10.0	10.9	219.4	241.7	10.2
Housing	186.5	202.8	227.6	8.7	12.2	211.5	243.6	15.2
Apparel and Upkeep	154.2	159.6	166.6	3.5	4.4	163.2	172.2	5.5
Transportation	177.2	185.5	212.0	4.7	14.3	192.6	227.7	18.2
Medical Care	202.4	219.4	239.7	8.4	9.3	227.8	250.7	10.1
Entertainment	157.9	176.6	188.5	11.8	6.7	180.9	193.4	6.9
Other Goods and Services	159.4	183.3	196.7	15.0	7.3	189.1	204.0	7.9

Source: U.S. Department of Labor, News.

HOURS AND EARNINGS OF PRODUCTION
CONSTRUCTION AND NONSUPERVISORY EMPLOYEES
NEW MEXICO
(monthly averages)

	Average Weekly Hours			% Change 1978-1979	Average Hourly Earnings			% Change 1978-1979
	1979 ^p	1978	1977		1979 ^p	1978	1977	
Mining	44.9	43.6	42.9	3.0	\$8.23	\$7.45	\$6.80	10.5
Construction	35.1	37.3	37.4	- 5.9	8.83	8.21	7.60	7.6
Manufacturing	39.5	39.1	38.8	1.0	5.33	4.79	4.43	11.3
Durable Goods	40.7	39.9	38.9	2.0	5.74	5.15	4.71	11.5
Nondurable Goods	37.7	38.1	38.7	- 1.0	4.63	4.21	3.97	10.0
Commun. & Utilities	41.5	40.8	40.6	1.7	7.28	6.85	6.32	6.3
Trade	35.1	35.7	36.0	- 1.7	5.49	4.97	4.62	10.5
Banking	41.1	39.2	37.0	4.8	3.66	3.48	3.41	5.2

^p Preliminary.

¹ Excludes eating and drinking places.

Source: New Mexico Employment Security Department.

ESTIMATED CIVILIAN LABOR FORCE AND EMPLOYMENT
NEW MEXICO

	November 1978 ^r	December 1978 ^r	October 1979 ^r	November 1979 ^r	December 1979 ^p
TOTAL CIVILIAN LABOR FORCE	534,600	531,500	560,900	552,500	552,600
Employment ¹	505,400	502,800	528,700	521,700	519,900
Unemployment	29,200	28,700	32,200	30,800	32,700
Percentage of Labor Force	5.5	5.4	5.7	5.6	5.9
Nonagricultural Wage & Salary Employment	455,000	456,900	475,300	474,100	476,500
Mining	25,300	25,700	27,200	27,300	27,500
Contract Construction	36,500	35,500	37,500	36,100	35,100
Manufacturing	34,100	34,000	35,500	35,600	35,500
Durable Goods	19,700	19,500	20,700	20,900	20,700
Nondurable Goods	14,400	14,500	14,800	14,700	14,800
Transportation & Public Utilities	27,800	28,100	28,800	29,100	29,200
Trade	104,200	106,300	109,300	110,100	112,400
Wholesale	20,700	20,700	22,000	22,100	22,200
Retail	83,500	85,600	87,300	88,000	90,200
Finance, Insurance, & Real Estate	20,300	20,400	21,500	21,500	21,500
Services & Miscellaneous	88,200	88,100	89,900	88,900	89,700
Government	118,600	118,800	125,600	125,500	125,600
Federal	35,200	35,100	38,200	38,000	38,000
State	33,700	33,900	35,700	35,800	35,500
Local	49,700	49,800	51,700	51,700	52,100

p Preliminary.

r Revised.

1 Includes labor disputes.

Source: New Mexico Employment Security Department.

ESTIMATED CIVILIAN LABOR FORCE AND EMPLOYMENT
ALBUQUERQUE SMSA¹

	November 1978 ^r	December 1978 ^r	October 1979 ^r	November 1979 ^r	December 1979 ^p
TOTAL CIVILIAN LABOR	197,300	199,500	207,500	207,300	208,500
Employment ²	187,000	189,300	196,400	196,100	196,400
Unemployment	10,300	10,100	11,100	11,200	12,100
Percentage of Labor Force	5.2	5.1	5.3	5.4	5.8
Nonagricultural Wage & Salary Employment	182,100	182,400	190,000	189,500	190,000
Mining	na	na	na	na	na
Contract Construction	15,700	14,900	15,600	15,100	14,800
Manufacturing	17,400	17,500	18,400	18,300	18,300
Durable Goods	12,000	12,100	12,800	12,800	12,800
Nondurable Goods	5,400	5,400	5,600	5,500	5,500
Transportation & Public Utilities	10,900	11,100	12,000	12,100	12,200
Trade	46,600	47,600	48,400	48,900	49,700
Wholesale	12,300	12,400	13,200	13,200	13,200
Retail	34,300	35,200	35,200	35,700	36,500
Finance, Insurance, & Real Estate	10,400	10,300	11,100	11,100	11,100
Services & Miscellaneous	40,700	40,500	42,300	41,900	42,000
Government	40,400	40,500	42,200	42,100	41,900
Federal	12,100	12,100	12,600	12,500	12,200
State	10,600	10,600	11,200	11,300	11,200
Local	17,700	17,800	18,400	18,300	18,500

na Not available, less than 50 jobs.

p Preliminary.

r Revised.

1 Albuquerque Standard Metropolitan Statistical Area includes Bernalillo and Sandoval Counties.

2 Includes labor disputes.

Source: New Mexico Employment Security Department.

ALBUQUERQUE FOOD PRICE INDEX: DECEMBER 1979
JUNE 1974 = 100 (all items)

	Dec. 79 Index	June 74 Dec. 79	% Change	
			Dec. 78 Dec. 79	Nov. 79 Dec. 79
ALL FOOD ITEMS	156.9	56.9	11.3	1.2
Cereals and Baked Products	149.4	49.4	19.6	1.2
Meat, Fish, Poultry	168.5	68.5	14.9	1.4
Fruits & Vegetables	152.2	52.2	0.3	1.4
Dairy Products	145.5	45.5	13.8	4.2
Other Food Items	155.7	55.7	10.9	-1.2

		December 1979		% Change		
Food Items	Quantity	Price	Index	June 74 Dec. 79	Dec. 78 Dec. 79	Nov. 79 Dec. 79
Flour, all purpose	5 lb	\$1.21	105.3	5.3	25.1	6.7
Corn Flakes	12 oz	.66	170.1	70.1	12.1	4.4
Bread, white	1b	.54	152.8	52.8	24.8	-1.0
Cookies, cream	16 oz	1.20	152.9	52.9	14.6	0.3
Hamburger	1b	1.67	193.3	93.3	31.5	1.5
Round steak, bone-in	1b	2.48	197.9	97.9	24.2	0.7
Sirloin Steak, boneless	1b	2.80	161.9	61.9	21.6	0.2
Chuck Roast, blade	1b	1.77	233.8	133.8	38.5	-1.0
Beef Liver	1b	1.26	135.4	35.4	43.0	-1.0
Pork Chops	1b	2.20	155.7	55.7	- 4.3	-1.1
Bacon, sliced	1b	1.88	163.1	63.1	- 9.8	6.4
Pork Roast, loin	1b	1.58	116.3	16.3	- 9.6	-2.6
Frankfurters	1b	2.22	176.4	76.4	24.3	2.8
Fryers, whole	1b	.62	125.0	25.0	4.0	1.7
Tuna, light chunk	6 oz	.91	158.0	58.0	- 0.2	1.8
Bananas	1b	.33	162.6	62.6	12.9	1.8
Oranges	dozen	1.70	191.6	91.6	5.2	2.0
Lettuce	1b	.46	105.5	5.5	-18.6	1.3
Potatoes, except baking	10 lb	1.52	79.1	-21.9	39.0	0.1
Tomatoes	1b	.76	144.1	44.1	10.7	-2.7
Carrots	1b	.39	170.8	70.8	42.2	0.4
Onions, yellow	1b	.25	177.5	77.5	14.8	14.9
Fruit cocktail	#303	.55	146.4	46.4	- 7.4	-6.0
Tomatoes, canned	#303	.56	171.3	71.3	4.0	2.3
Peas, canned	#303	.41	137.4	37.4	-10.4	-6.4
Frozen orange juice	6 oz	.52	196.4	96.4	- 6.8	6.2
Frozen Broccoli spears	10 oz	.64	158.0	58.0	-14.3	3.9
Milk	quart	.56	133.5	33.5	12.4	0.8
Evaporated milk	13 oz	.47	160.9	60.9	12.6	3.7
Ice cream	1/2 gal	1.67	143.3	43.3	5.9	2.9
Cheese, sliced	6 oz	1.06	178.8	78.8	26.0	15.3
Eggs, AA large	dozen	.87	143.3	43.3	0.6	-8.9
Margarine	1b	.73	120.3	20.3	2.7	2.3
Sugar	5 lb	1.33	92.4	- 7.7	0.6	1.3
Coffee	1b	3.17	245.7	145.7	3.6	0.2
Instant coffee	6 oz	3.54	223.4	123.4	12.9	-1.7
Cola drink	10 oz can	1.23	157.0	57.0	7.8	-1.3
Chicken noodle soup	10 oz	.30	132.1	32.1	9.4	0.0
Baby food, strained	4 oz	.24	181.2	81.2	15.6	1.1
Frozen french fries	9 oz	.44	204.3	104.3	84.2	1.1

ALBUQUERQUE FOOD PRICE INDEX: JANUARY 1980
JUNE 1974 = 100 (all items)

	Jan. 80 Index	June 74 Jan. 80	% Change	
			Jan. 79 Jan. 80	Dec. 79 Jan. 80
ALL FOOD ITEMS	154.5	54.5	4.3	- 1.5
Cereals and Baked Products	150.3	50.3	19.2	0.6
Meat, Fish, Poultry	170.1	70.1	6.0	0.9
Fruits & Vegetables	138.6	38.6	-14.9	- 8.9
Dairy Products	143.8	43.8	12.8	- 1.1
Other Food Items	154.9	54.9	8.9	- 0.5

Food Items		January 1980		% Change		
		Price	Index	June 74 Jan. 80	Jan 79 Jan. 80	Dec. 79 Jan. 80
Flour, all purpose	5 lb	\$1.09	94.7	- 5.3	10.3	-10.1
Corn Flakes	12 oz	.67	173.6	73.6	11.6	2.1
Bread, white	1b	.56	158.2	58.2	29.0	3.6
Cookies, cream	16 oz	1.17	149.0	49.0	11.6	- 2.6
Hamburger	1b	1.59	183.3	83.3	1.5	- 5.2
Round steak, bone-in	1b	2.51	200.3	100.3	13.1	1.2
Sirloin steak, boneless	1b	3.28	189.4	89.4	39.8	16.9
Chuck roast, blade	1b	1.89	248.6	148.6	24.3	6.3
Beef liver	1b	1.32	141.7	41.7	54.9	4.7
Pork chops	1b	1.84	130.3	30.3	-22.3	-16.3
Bacon, sliced	1b	1.99	172.6	72.6	- 6.5	5.9
Pork roast, loin	1b	1.46	107.9	7.9	-33.6	- 7.3
Frankfurters	1b	2.21	175.5	75.5	22.4	- 0.5
Fryers, whole	1b	.67	135.0	35.0	8.9	8.0
Tuna, light chunk	6 oz	.95	164.4	64.4	- 1.9	4.1
Bananas	1b	.35	173.1	73.1	28.0	6.5
Oranges	dozen	1.19	134.1	34.1	-39.1	-30.0
Lettuce	1b	.34	77.7	- 22.3	-57.6	-26.4
Potatoes, except baking	10 lb	1.50	78.2	- 21.8	28.4	- 1.1
Tomatoes	1b	.52	99.8	- 0.2	-21.3	-30.8
Carrots	1b	.40	173.6	73.6	11.4	1.6
Onions, yellow	1b	.17	121.0	21.0	-32.3	-31.8
Fruit cocktail	#303	.63	168.0	68.0	5.3	14.7
Tomatoes, canned	#303	.55	167.7	67.7	3.2	- 2.1
Peas, canned	#303	.43	144.5	44.5	- 6.8	5.2
Frozen orange juice	6 oz	.50	188.7	88.7	- 8.7	- 3.9
Frozen broccoli spears	10 oz	.59	144.8	44.8	-20.9	- 8.3
Milk	quart	.57	135.5	35.5	13.9	1.5
Evaporated milk	13 oz	.48	161.8	61.8	12.2	0.5
Ice cream	1/2 gal	1.71	146.7	46.7	7.3	2.4
Cheese, sliced	6 oz	.95	159.0	59.0	15.5	-11.1
Eggs, AA large	dozen	.78	127.6	27.6	-13.0	-10.9
Margarine	1b	.71	118.0	18.0	5.8	- 1.9
Sugar	5 lb	1.42	98.7	- 1.3	7.0	6.8
Coffee	1b	3.20	247.5	147.5	10.6	0.7
Instant coffee	6 oz	3.33	210.5	110.5	3.6	- 5.8
Cola drink	10 oz can	1.34	na	na	na	na
Chicken noodle soup	10 oz	.32	139.1	39.1	7.9	5.3
Baby food, strained	4 oz	.24	178.4	78.4	12.3	- 1.6
Frozen french fries	9 oz	.41	192.1	92.1	46.8	- 6.0

na Not available.

Abstracts of Articles Appearing in 1979 New Mexico Business

JANUARY-FEBRUARY

Staff, *A View of the 1978 New Mexico Economy and a Forecast of the 1979 New Mexico Economy*.

This issue is devoted to a discussion of the New Mexico economy in 1978 and the outlook for 1979. A discussion of each major sector of the state's economy is provided. In addition, actual numerical forecasts for the major economic variables are included. These quantitative forecasts were made possible through the development of a computerized, econometric forecasting model of the New Mexico economy.

MARCH

Mason, Ben and Tom Clevenger, *Achieving the Potential for Irrigated Agriculture in New Mexico*

The productivity of irrigated agriculture is a multifaceted concern for the state of New Mexico. In this article the authors show that irrigated agriculture in New Mexico is not reaching its potential. Factors contributing to this underachievement and possible corrective measures are discussed.

APRIL

Bonem, Gilbert and Richard Mead, *Copper Smelting in the Southwest U.S.*

This article discusses the problems facing the copper industry in the southwest: dependence of the regional economy on copper, environmental and resource use restrictions, and economic and environmental impact of technological change. To address these problems in a systematic and quantitative manner, the authors have adapted a linear programming model initially developed for the petroleum industry. The article describes the model and its applications to the copper industry in the southwest.

MAY

Bennett, Max D., *Health Priorities for the 1980s*

This discussion reviews changing demographic

patterns which will affect health problems in the 1980s. Two current and continuing problems in health care are then analyzed: rising costs, and access to and equity in health care. Finally, eight priorities for the New Mexico health care system in the 1980s are suggested.

Peters, William S. and Mark C. Resta, *Measuring the Changing Price Level*

Methods used to calculate various price indexes are summarized in this article. The Department of Labor's Consumer Price Index and the GNP price deflator are discussed as indicators of the rate of inflation and changes in real earnings. The use and application of the indexes are outlined.

JUNE

Chung, Pham, *On Inflation*

Since the mid-1960s, the economy of the United States has been afflicted with a serious inflation problem. This article explores the causes and consequences of the recent inflationary experience in the U.S. the relative strengths and weaknesses of alternative solutions to inflation are also discussed.

JULY

Resta, Mark, *The New Mexico Economy in the Mid-1970s*

The information provided in this article is intended to give a brief overview of the New Mexico economy in recent years. In addition to a presentation of highlights of New Mexico's population, employment, and income characteristics, attention is given to several of the state's individual economic sectors, including agriculture and mining.

AUGUST

Wombold, Lynn, *Projections of the Population of New Mexico by County: 1975-1990*

Components of population change in the U.S. in recent years are evaluated in terms of the impact these trends have had on New Mexico's

population growth. Population projections for New Mexico counties for 1980, 1985, and 1990 are presented.

SEPTEMBER

Church, Albert M., and Ronald A. Podboy, *The Property Tax—Equity and Protest in New Mexico and California*

This article compares the property tax procedures in California and New Mexico, with particular emphasis on property tax equity in Bernalillo County. California's Proposition 13 is discussed. Methods for equalizing New Mexico's tax rates are suggested in order to avoid a similar taxpayers revolt.

Weiss, Joseph E., *Dale Bellamah, 1914-1972*

Postwar Albuquerque was largely shaped by urban developers. Dale Bellamah was prominent among these developers. This brief biography summarizes Bellamah's career from his beginnings working for the Santa Fe Railroad to his rise as head of a real estate and development empire which bought and built vast tracts of property in Albuquerque and the southwest.

OCTOBER

Lundahl, Craig R., *Educational Attainment in New Mexico, the Mountain States, and the United States, 1970 and 1976*

This article compares the increase in levels of educational attainment in New Mexico, the Mountain States, and the U.S. between 1970 and 1976. Compared to the U.S. and to other Mountain States, New Mexico fell behind in percent increase of high school graduates, but showed a slightly higher percentage increase in number of college graduates. Related data, compiled by the BBER staff, includes tables on subjects ranging from pupil-teacher ratios by school district to illiteracy rates by state.

NOVEMBER

Kasner, Betsie and Lynn Wombold, *The 1980 Census and New Mexico*

This article summarizes the planning that has gone into the 1980 Census, explains the method for taking the Census, and outlines data to be released after questionnaires are processed and the responses tabulated. Reference is made to New Mexico where applicable.

Wombold, Lynn and Betsie Kasner, *Census Related Programs*

To meet the needs of users of census data, a number of federal-state programs have been developed by the U.S. Bureau of the Census. The function and status of each program in New Mexico are described.

DECEMBER

Gray, James R., Mary A. Bray, and John M. Fowler, *Wood—A Popular Fuel in New Mexico*

Questionnaires concerning fuelwood use were administered to a random sample of the 26,000 people who contacted the Forest Service in 1977-78 requesting information about free wood. Survey responses answered such questions as how far wood harvesters traveled to gather wood, how the wood was used, and to what extent harvesters saved energy by using wood as an alternate fuel. Application of the results of this study to future policies concerning New Mexico's national forests is discussed.

Kelfer, Ilene, *The Housing Market in Albuquerque*

This article examines the degree to which the Albuquerque housing market has been affected by current economic conditions. Economic and demographic factors which affect housing markets are discussed. Recent data for the Albuquerque housing market is presented, and the data are compared to economic activity during the 1974-75 Albuquerque housing recession.

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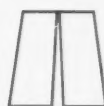
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The Greening of the Navajo Indian Irrigation Project

BAHE BILLY and PHILIP RENO

[Dr. Bahe Billy has been working in professional, educational, and managerial positions in Indian agriculture for the past fifteen years. He has also proved his agricultural ability the hard way by running his own farm and making it pay. The first Navajo to gain a Ph.D., awarded in Agronomy by the University of Arizona, Dr. Billy is now Dean of Instruction of Navajo Community College at Shiprock.]

Philip Reno teaches economics at Navajo Community College, Shiprock Campus and will teach Indian Economic Development at The University of New Mexico this summer. He has written extensively about Indian affairs. His book on Navajo resources, Mother Earth, Father Sky, and Economic Development, will be published this fall by UNM Press and the Native American Center at UNM.]

This spring the Navajo Indian Irrigation Project (NIIP) was a green panorama which promised food for a food-short world and productive work for underemployed Navajos. Financing, however, remains a problem: just as it reached time to work the land, production funds were held back, and crews had to be laid off. Previous time spent planting and cultivating was wasted.

The breakdown in financing crop production this spring will no doubt be repaired, as was a similar hiatus last spring. The year before that, a report from the project manager to the tribal Office of Management and Budget stated that "problems encountered in the soil, irrigation management, and employment have resulted in the need to reassess economic plans and funding for NAPI¹ development." That year, 1977, was the last year in which the tribe invested its own money in project development. Up to that time, the tribe had invested \$12.5 million in the project, but the tribe's liquid assets were running low, and no end could be seen in project needs for development money. Another means of project financing had to be found.

Short run financing to keep the project going was obtained through a BIA guarantee of a bank loan to be repaid out of revenues for crops. This means of financing seems to break down at planting time, but the primary problem is that it must be renewed each year. Forty thousand acres of

land will be under cultivation this year, and in each following year another 10,000 acres are scheduled to be added, until 110,630 acres are in production.² This is the government's commitment, fulfilled annually in the appropriation process. Although the fulfillment is often anemic, plans have to be made on the assumption that the commitment will be honored.

Each new block requires irrigation systems, roads, seeds, fertilizer, herbicides, pesticides, and other inputs. The bulk of these costs are funded for the first year on each block by the BIA. After the first year, these costs are borne by the Navajo Agricultural Products Industries (NAPI). Other operating costs such as facilities, staff and farm labor, machinery and maintenance, fencing, and livestock operations are borne by NAPI in the first year as well as following years. Capital is needed for these operating costs until income generated by farm operations provides a surplus to cover development costs on new blocks of land.

Given the soil and climatic conditions on the project and the problems inherent in starting up such a large, new venture, four years will probably be required for each block to reach the break-even point and to begin generating a surplus. The soil is sandy and very low in organic matter, plant food, and water-holding capacity. The climate is marred by harsh spring winds and a relatively short growing season. By the time block

one is breaking even, which should be this year (1980), blocks two and three will need financing and block four will be starting its first year, with only partial funding by the BIA. This process will go on through eleven blocks, and the project as a whole will be hard put to generate any significant surplus income before the mid-1980s. Nevertheless, only haphazard means exist for financing project operations in the meantime.

Manpower development for the project is in another hiatus. A program offered by Navajo Community College for training farm workers in essential skills is highly successful considering its severely limited funding, but it was cut off from CETA support at the end of 1979. CETA continued limited farm training programs in places geographically distant from the project.

Finally, serious questions continue to arise about the organizational form of project operations. Following a study by New Mexico State University of costs and returns for alternative crops and farm management structures,³ the project was set up as a single, corporate-farm type unit. By 1979 the consequences of the corporate farm operations were in serious doubt, and the President's Office of Management and Budget ordered a cost-benefit analysis comparing corporate farm with family farm and cooperative operations.

Other challenges confront the project—challenges to the project's water entitlement, to development of linkages with the tribal economy, and to initiation of research into environmental changes caused by the project. There is also a formidable array of other obstacles. The basic challenge is, however, that of moving ahead to productive, profitable operations. Without such operations all other questions are merely speculative. We, therefore, note the major questions, as we see them, concerning mobilization of capital, manpower, and management needed for such operations.

CAPITAL

The major question confronting the tribe in planning for financing the project concerns operating capital.⁴ An up-to-date, detailed study is needed of operating capital requirements, and based on findings of this study, sources for the

required funds must be found and means of administering the funds must be developed.

Capital requirements. Capital requirements involve both fixed capital (machinery, sprinkler systems, facilities, mills, etc.) and working capital (labor, fertilizer, fuel, etc.). The New Mexico State University study of 1971-72, cited previously, calculated the fixed capital needed for production of crops which appeared to be most profitable. This study was based on findings of the New Mexico State University experimental farm at the northern edge of project lands. In 1972 prices, investment capital required for the project totaled \$56 million.

Compared to 1972, prices of needed items are about twice as high today, more than twice as high for fertilizer and most machinery, somewhat less than twice as high for labor and other items. Also, the optimum product mix has no doubt changed. For example, sugar was among the most profitable crops in 1972 and cattle prices have been high the last few years and may be peaking out. At any rate we can assume that \$100 to \$200 million will be needed in fixed capital by the time the full 110,630 acres are in cultivation.

Production credit and other operating capital—labor, fertilizer, fuel, etc.—was calculated by NMSU to be \$40 million each year by the time the entire project was in production. At current prices, \$80 million or more will be needed each year.

Sources of Capital. Failure to plan a financial base for project operations followed, in part, from unrealistic projections of project earnings,⁵ and in part from BIA and NMSU assumptions that the tribe could provide needed funds while the tribe assumed that government funds would be available. Given the magnitudes of capital requirements, an effective tribal institution will be needed, in the words of a report by an employee of the World Bank,⁶ "for preparing, submitting, negotiating, and concluding the (required) financial arrangements." Also needed are firm commitments to financial support by the major parties to project development—the tribe and various federal and state governmental bodies.

Issues at the various governmental levels begin with tribal support for project funding. In spite of all the talk about "rich Indians," Navajo funds

fall far short of needed dollars quantities. In essence, Navajo funds depend on returns from tribal mineral leases. Navajo returns from minerals total approximately \$15 million annually and constitute by far the major part of the tribal share of total governmental services to the Navajo. These services are very thin for an area so large and comprising so many poor people. There is almost no way to cut down on these services in order to provide investment capital.

The alternative is to increase the revenues. Royalties for Navajo coal in particular are far below a fair market price. If the royalties from Utah International, Peabody, and Pittsburys-Midway could be brought up to the standard price in government leases, tribal revenues would be increased by \$5 to \$6 million or more a year. (This assumes 16 to 18 million tons times an average increase in rates of 33 cents a ton.) Such an increase could be set aside for investment in economic development and specifically for investment in productive enterprise such as NAPI.

Another means of providing returns from Navajo minerals lies with the State of New Mexico. Severance taxes levied on Navajo minerals bring the State of New Mexico millions of dollars a year. These taxes go into a New Mexico Severance Tax Fund, which now amounts to over \$350 million. The State Legislature can provide money from this fund for capital outlays by New Mexico communities. The concept is to use funds from resource depletion to build a viable economy for the time when the resources are gone. This concept also gives Farmington and the San Juan Valley a stake in Navajo Irrigation Project development. The project needs these communities, and they need the project—a model for reciprocal support.

Regular lending sources for agriculture may be available once an effective tribal agency is established and tribal and governmental commitment is clear. Commercial sources are limited by the trust status of tribal assets, however, and credit from Farmers Home Administration and Production Credit Association may be available only to family farms and cooperatives. This limitation leads us to the other issues concerning the project—the issues concerning project manpower and management.

MANPOWER

A requirement for project success, everyone agrees, is skilled manpower. Capital investment in the irrigation system and in related enterprise will run over \$400 million. Investment in Human Resource development has been only 1% or 2% of capital investment—a foolishly low sum to protect such a large capital outlay. Plans for the project must obviously include an effective means of human development.

Manpower requirements for NAPI development were set out by New Mexico State University. For a time after these projections, there was a brief flowering under Four Corners Regional Commission leadership of cooperative manpower planning by the major institutions and agencies involved in the project. A manpower coordinating committee met regularly for about a year, with President Gerald Thomas of New Mexico State University as Chairman, President Thomas Atcitty of Navajo Community College as Vice-Chairman, and Dr. Bahe Billy of NAPI as Secretary. The endeavor had no base except social need, however, and social need was not enough to keep it going.

It has seemed to us that all educational institutions should have a place in education and training for Navajo development, but that the home base for Navajo development should be in Navajo country. We have therefore held out for a significant role for Navajo Community College (NCC), Shiprock, in training for NAPI. Funding agencies have, however, preferred to support non-Navajo institutions.

Early in our efforts to set up the Shiprock farm training programs, for example, we learned that the Bureau of Reclamation had access to Labor Department funds for a training institute for NIIP. The funds were not available for a Navajo institution. Not long thereafter NCC asked HEW for funds to establish an Indian resources program. The funds were denied, but before long such a program was funded for NMSU. We were glad for this recognition of need, but wonder about the persistence of the concept of Indian dependency, even in agencies professing other views.

The basic question, or the bottom line, in manpower programs is, thus, the same question as in management structure. The basic question is the

means of developing Navajo capability to manage their own agricultural resources.

MANAGEMENT STRUCTURE

The Navajo Indian Irrigation Project was expected by those who sponsored it to provide "1,120 farms for Navajo families, (and) employment for 9,000 Navajos."⁷ After the Act was passed, in 1962, work on project construction dragged along, and sometime in the latter 1960's BIA planners changed the original concept of cultivation of project lands by family farmers to operation as a single, large-scale agricultural unit managed by a Tribal enterprise.

Historically the motivating force behind American agricultural development has been family farms, although corporate farms have been taking over an increasing share of the country's agricultural production. Nevertheless, the change from family farms to a type of corporate farm was significant, even pivotal, in project development. Still more significant for project planning was the lack of prior discussion of the change with Navajos, or with almost anyone outside of the BIA and Bureau of Reclamation.⁸

The single unit, large scale form of project operations was adopted in light of findings of the study, cited above, by a NMSU team comparing single unit with family farm operations. By the close of the second year of operation, it was clear that the study findings did not pass the test of actual farm production. The experience on which the New Mexico State University team based its findings could not be duplicated on Irrigation Project land, with the vast expanses of hitherto uncultivated soil, its crews of newly trained Navajos, its management staff hastily pulled together from other places, and its dubious funding sources.

In 1979, the BIA required project operation by a professional management firm before it would guarantee a bank loan to enable project operations to continue. That same year the Office of Management and Budget asked for analysis of costs and benefits of large scale project operations compared with family farm and cooperative operations.

Ball Management Systems, the firm which has contracted to run the project, obviously has a

difficult task ahead, in the face of the lack of a capital base and no funds for manpower training by the primary source of trained workers. Without doubt, the new management will maneuver to find whatever openings they can as their predecessors did, and hopefully with better luck. The test of their work, at any rate, will be their success in developing operations by Navajo management, and in providing Navajo management with the managerial, marketing and cash flow knowledge which the firm's widespread enterprises have presumably given them.

Last but not least, we expect the issue can now be faced of Navajo involvement in project development through family farms or cooperatives, or both. NCC has proposed setting aside a portion of an oncoming block of project land for demonstrating means for advanced students to manage their own farms, and to set up cooperatives to pool machinery, marketing, etc. Ball Systems, NAPI, BIA, USDA and others could help make this training program a success, and hopefully they will.

In conclusion, the greening of the Navajo Indian Irrigation Project depends on a firm plan for developing the capital, manpower, and management needed to bring the project along to profitable operations under Navajo management. We hope that this brief summary of issues facing project operations will be helpful in developing such a plan.

FOOTNOTES

1. Navajo Agricultural Products Industries, the enterprise established by the Navajo Tribe to manage the Irrigation Project.
2. The Navajo Indian Irrigation Project Act created the Irrigation Project "for the principal purpose of furnishing irrigation water to approximately 110,630 acres of land, said project to have an annual diversion of 508,000 acre-feet of water." The quantities of both land and water have been at issue in a series of efforts by state and federal agencies to cut the specified Navajo entitlement. Among the efforts has been the reduction in irrigated acreage from 110,630 to 105,200, because of land used for canals, roads, buildings, etc. The tribe holds that such land is in addition to, not part of, the 110,630 acres specified for irrigation in the act.

3. "Projected cropping patterns, livestock enterprises, processing activities, capital requirements, employment, income, and training needs for alternative farm organizational structures for the Navajo Indian Irrigation Project." William D. Gorman, et al., New Mexico State University. A special report to the Four Corners Regional Commission, June, 1971.
4. Financing of roads, schools, housing, etc. will presumably be found in BIA, UD, DOE and the other national sources for such projects.
5. The NMSU study team noted above forecast net project earnings of \$16 million per annum by the time the project was fully operational, and a break even point for the whole project after four years of cultivation.
6. Richard L. Storch, "Report on Navajo Development Financing, a Summary of Prospects," a report prepared for the Navajo Science Committee, November 11, 1975.
7. Testimony by Senator Joseph Montoya, Steve Reynolds, W. E. Brewer and others: Hearing before the Senate Sub-Committee on Water and Power Resources, Committee on Interior and Insular Affairs, July 15, 1969.
8. In 1972 Harris Arthur was commissioned by NCC President Ned Natathli to study Navajo aspirations for a part in Irrigation Project development. Mr. Arthur found that Navajos in the area of the project hoped to have project acreage to farm.

Technological Innovation and the Small Firm in New Mexico*

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INTRODUCTION

The United States has numerous areas which are known for the large number of small, technology-based firms originating there. Areas such as the famous "Route 128" near Boston, Palo Alto/San Francisco, Dallas/Fort Worth and others are recognized as somehow being conducive to successful growth of small firms which originate on the basis of a technological innovation. Studies such as Mahar and Coddington (1965) and Roberts and Wainer (1968) suggest that a local scientific complex—composed of technology-based industry, major universities, or government research laboratories—are a necessary but not sufficient condition for the routine emergence of this type of small enterprise. There are many areas of the United States which contain major elements of the science complex but do not regularly spawn technical firms. This study seeks to examine one of those areas, New Mexico, and to determine the problems that are regularly encountered by the firms that are involved in technological innovation. From this we can hope to determine some of the conditions that are necessary—beyond the local science complex—to promote small business participation in high technology development.

In order to study small business' role in high technology industry within the state, a model of the innovation process has been constructed as a guide for the research effort. The basis for this model relies on the findings of others who have analyzed and discussed innovation and on our own thinking about how innovation occurs within

a small business. The model is hypothetical because investigators have not previously focused on small business. The literature applicable to small business and technological innovation is quite limited. Most students of technological innovation have chosen to examine it at the level of the large firm or the big laboratory. For numerous reasons, small businesses must undertake innovation differently than large businesses. Therefore, the model discussed below has been developed with the small business in mind. It serves as a guide to this study which provides an initial testing of the hypothesized relationships found in it.

A MODEL OF TECHNOLOGICAL INNOVATION FOR SMALL BUSINESSES

In Figure 1, the innovation process is seen to begin when a perceived market need and a technical means are synthesized into an idea for a new product, service, or process. There is also the possibility that the newly generated idea can yield a different and untried application for an existing technology. Whichever the case, the idea must pass from a "conceptual" state into a "physical" state if the innovation is to achieve success. This passage is a progression from an idea to a product prototype to an inventory of finished and distributed goods.

Product development is comprised of four types of activities—research, development, engineering, and manufacturing. Not all of these are necessarily done in every instance of innovation

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or in any sequential order. For example, research to support a particular innovation may be done after problems are encountered in the development or the engineering of an attempted new application. And, possibly, the research may be done outside of the small firm.

Many false starts and changes in approach can occur in the innovation process. Therefore, no fixed sequence can be specified for the activities in Figure 1. In one instance, an innovator proceeded to pilot production before discovering that the design violated several codes; redesign required considerable effort and delay, causing severe cash flow problems. This required more effort by the entrepreneur to raise additional external resources. The logic does not necessarily start in the upper left corner either. Frequent starts may occur when the market suggests possible new applications if the product could be modified, used as a component in a different system, etc.

The acquisition of outside resources is a critical feature of this model which distinguishes it from models of innovation in large firms. It is particularly critical to an innovation that results in the start-up of a new firm because there is no existing structure or resources to divert or convert to the new venture. Not only is there a dearth of assets, there is no organizational track record to instill confidence in external investors. Their decisions are based on an assessment of organizational and entrepreneurial *potential* and on the characteristics of the innovation itself.

The acquisition of human resources and technology are closely coupled in this model. Gibbons and Watkins' (1970) findings showed that technology transfer to new and existing small firms is primarily accomplished by the transfer of people. An investigation—not exhaustive by any means—at one local government laboratory quickly revealed to us over fifty people had left the lab during the last decade to establish their own businesses. Over one-half of them established companies that were based on sophisticated and dynamic technology. (The dynamic aspect is crucial because it implies that continued technical capability and effort is necessary to remain competitive and generally viable.)

Acquiring external resources also means estab-

lishing linkages to other individuals and organizations who will perform some of the innovation functions on a contracted basis. The use of representatives, established dealerships, etc., is reliance upon external resources for diffusion of an innovation. For the small firm, outside resources which complement internal capabilities can be of critical importance at any or many points of operation.

During the product development stage, there is generally some form of communication with representative potential customers. This does not imply any form of systematic market research. Communication is accomplished in various ways to provide design information to reconfigure the product. It may occur with greater frequency in a more elaborate fashion if the innovation is intended for the industrial or governmental markets or if it involves a nonstandardized product such as a system (or a component of some other system) that is uniquely designed for each customer. In these instances, the innovator cannot develop product design specifications through an isolated and personal perception of what potential customers want.

Product diffusion (marketing) occurs when the final product or service is ready for the marketplace where it becomes accepted or rejected. The success of the diffusion effort is a function of product, price, promotion, and distribution. The degree of novelty of the innovation and the functions it performs for the customer are primary considerations for the entrepreneur. If there are no substitute products or other forms of competition, the innovator has an easier marketing task though the job is still complicated by its newness and unfamiliarity.

THE STUDY

The Study Process

The foregoing view of the innovation process was utilized to develop an instrument for interviewing technical entrepreneurs within New Mexico. The questionnaire contained open-ended queries that required a one to two hour interview. Respondents were the founder(s) or the top officer(s) of their respective firms.

The list of possible technological innovators was constructed from conversations with experts

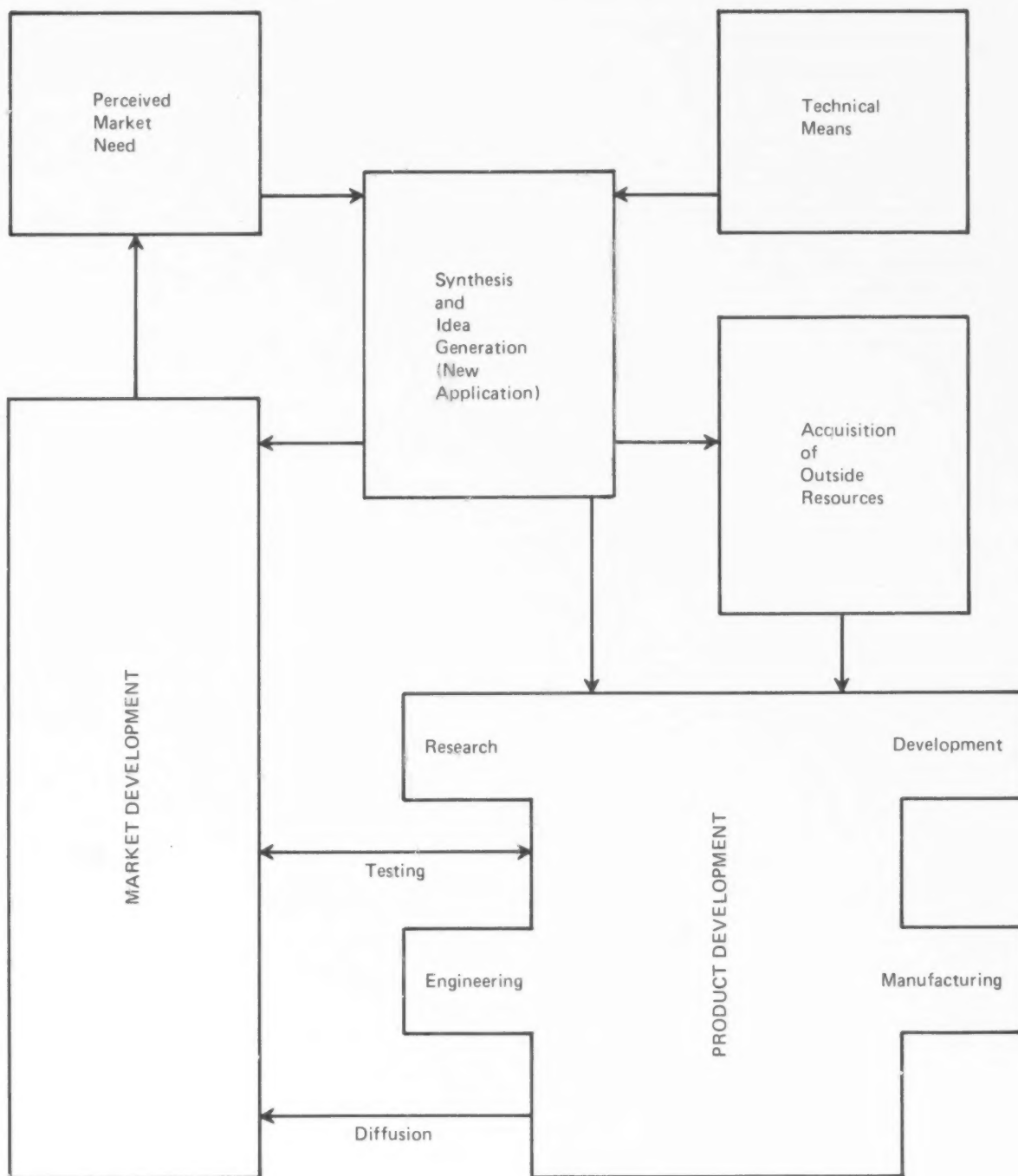


Figure 1. A model of technological innovation for small firms

on science and technology in New Mexico including SBA officials, SCORE members, technology transfer officers of major laboratories, NASA Technology Applications Center personnel and files, and the Albuquerque Chamber of Commerce. Over 90 percent of the identified firms were in the metropolitan Albuquerque area. The list of possible companies was then reduced from 50 to 23 through telephone calls. The heads of these 23 firms considered themselves to be technological innovators by our definition, that is, developers of a new product, service, or production process based on a substantial technological advancement over the previous state of the art. Of these 23 firms, 19 agreed to participate and were able to meet with the authors during the period of the study. Seventeen of the interviewed firms were from the largest metropolitan area and appeared to be representative of technical entrepreneurs in New Mexico.

The Results

Analysis of the interview data revealed the following characteristics of the respondent firms:

- 1) *Age*—The age of the firms ranged from under one year to over 27 years. Over 60 percent had been in existence for ten years or more. The two oldest firms were early spinoffs from Sandia Laboratories and Los Alamos Scientific Laboratories.
- 2) *Ownership*—All of the 19 firms are currently incorporated. This is reasonable in view of the substantial risk associated with technological innovation. However, some of the advantages of incorporation were lost as company officers personally guaranteed their corporation's bank loans. Also of interest is the fact that 13 of the 19 firms had gone through a change of their ownership/management at least once during their history. This high incidence of change is indicative of the stresses that most of these firms experienced in their formative years.
- 3) *Size*—The size of the companies was measured in terms of employees and revenues. The distribution on the basis of number of employees (n) was:

$0 < n \leq 10$ Seven	$10 < n \leq 25$ Four	$25 < n \leq 50$ Four
$50 < n \leq 100$ None	$100 < n \leq 200$ Two	$n > 200$ Two

Of those who revealed annual sales, five were less than \$100,000; an additional three were below \$500,000; one more was below \$1,000,000; and four others were between \$1,000,000 and \$10,000,000.

- 4) *Growth*—Growth, measured in terms of revenue, exhibited high dispersion within the sample as might be expected. Within the last several years, seven firms experienced no growth while two characterized their growth as "slow." One had a small revenue base with widely fluctuating changes. Of the remainder, eight thought their growth had been "very good" and one "remarkable" (over 70 per cent).
- 5) *Products*—A wide range of products and services was or is offered by the companies interviewed, including solid waste shredders, avionics, ultra-high-performance speakers, laser and computer devices, solar and radiant heating devices, specialty instrumentation, security systems and the design of clean rooms using laminar flow technology. Since each interview focused on one innovation, the list contained nineteen items. The list was dominated by electronic devices; only three were primarily mechanical devices or processes.
- 6) *Markets*—Seventeen of the firms reported sales to industry, nine to government, six to other institutions, and five to individual consumers.
- 7) *Laboratory Relationships*—The impact of government sponsored laboratories on technological innovators in New Mexico has been substantial, either as a previous employer of the innovator or as a contractor. Nine firms reported some type of involvement with Sandia Laboratory, Los Alamos Scientific Laboratory or Kirtland's Special Weapons Laboratory.
- 8) *Professional Background*—Background information about the firms' leaders revealed the expected strong technical orien-

tation—four Ph.D.s in scientific areas and eight formally trained in engineering. In addition, their primary work experience before starting their own firms had also been in technical roles.

- 9) *Motives*—Wealth was not the primary motive for the entrepreneurial activities of the majority of the respondents. This finding agrees with the results of other studies that have examined entrepreneurs' motives. Nine indicated "freedom to make own decisions" as the most important motive; three said that expected wealth was dominant; and one thought that the "status of operating your own firm" was his primary motive. Three of the innovators expressed desires to work on pressing societal problems. That three of nineteen would mention such an interest was impressive in light of Maccoby's (1976) findings where only two of 250 managers from 12 of the largest U.S. high-technology corporations indicated such interests.
- Location in New Mexico may have stimulated some start-ups. A lack of diverse employment opportunities in the state forced some to start their own firms or move. A vast majority were located in New Mexico because "we're from here" or "we like it here." This type of attraction for the state was expressed by 18 of 19 respondents. More than one individual explicitly mentioned his efforts to return here, and only one cited a list of business-oriented reasons for moving his company into the state.
- 10) *Results*—Based on the personal criteria and judgments of those interviewed, ten of the innovations were successes and three were failures. Six had not been exploited sufficiently yet to judge the result. The criteria for success had considerable range and did not always include profitability.
- 11) *Stimulus Type*—Concerning which came first, the perceived need or the new technical means for the innovation, 18 of 19 respondents indicated that the need appeared first. However, some of the perceived needs were highly esoteric and not

pervasive in society. Thus the technical means may have come first in some instances *for a specific application*. Over one-half clearly identified market segments before the product was offered for sale.

- 12) *Income during Innovation*—While working on their innovations, 12 of 19 individuals had another source of support or income during most of the development process. Given the number of years needed to complete innovation processes, this finding was not surprising and might be considered a norm for future innovators.
- 13) *Technology Source*—The technology utilized in the 19 innovations was reportedly supplied by the individual entrepreneur in about 70 percent of the cases, purchased in 15 percent and freely obtained in the other 15 percent. Fewer than one-third of the firms had patents or patents pending. Four firms could not obtain patents because of the government patent policy. Almost one-third expressed dissatisfaction with either the government patent policy or the patent process itself. It was perceived as a protracted battle of insignificant value. In addition, frequent problems occurred in seeking patent assistance. There appears to be a dearth of patent attorneys in New Mexico, and those innovators who need such services may seek them outside of New Mexico.
- 14) *Resource Acquisition*—Acquiring resources was a major problem for most of the firms. The specific resource difficulty and its frequency of occurrence for the 19 firms were as follows:
 - funds (15 firms)
 - perceived difficulties with the banks and the SBA
 - personnel (9 firms)
 - attracting and keeping qualified people, mainly technical talent
 - suppliers (12 firms)
 - lack of local suppliers
 - facilities (4 firms)
 - locating facilities to meet special needs

- transportation (2 firms)
- due to unique nature of product licenses (6 firms)
- particularly customs and exports

15) *Other Problems*—In addition to the problems enumerated above, there were also common difficulties cited with tax and estate laws, the nature of the job shop in New Mexico, the operations of government labs, and the type of engineers in New Mexico. Capital gains taxes and estate laws were mentioned by several entrepreneurs as serious impediments to additional innovations for those firms that have been particularly successful.

Job shops in New Mexico were described as geared toward large labs; thus, they are accustomed to doing work of very high quality at high prices. Those innovators who are contractees to the large labs mentioned good prices and technical assistance from the labs to those suppliers who are specially attentive to the labs; yet the labs cannot provide them with a constant supply of work. When the contractees seek work elsewhere, they give the labs less attention which, in turn, loses their laboratory business.

Many of the engineers in New Mexico were described by the respondents as influenced by the government-sponsored laboratories here. The importance of the mission in weapons research plus the level-of-effort funding of the labs tends to subordinate the goal of cost minimization. Engineers practicing in this environment were reported by several of the entrepreneurs to be insensitive to low-cost design needs in commercial markets.

ANALYSIS AND CONCLUSIONS

In order to examine the results of these innovation cases and to relate the results to patterns of behavior, the authors reviewed all the nineteen cases and separated them into three categories—success, failure, and undetermined. The principal criterion for success was a profitable, on-going operation based on the particular innovation. An

innovation was termed a failure if it had been terminated or proven unprofitable. "Undetermined" means that the innovation has had insufficient exposure to the marketplace to judge its likely outcome at this time.

One of the shortcomings of this type of study is that all data were perceptions of the principals as they reported them to the authors. There was insufficient time to validate these perceptions with other sources. Generalizations are also difficult because of the small sample size. It should be noted that almost every generalization has at least one counter-example. For example, many innovators do not manage in accordance with established management principles although some still succeed in spite of (or because of) this independent behavior.

Failure seems to be associated with entrepreneurs who have such a strong technical orientation that commercial aspects of the innovation process are virtually ignored. However, our sample included several examples where an innovation that was technically sound but commercially unsuccessful was frequently rescued by a change in management with a stronger marketing orientation. A higher incidence of failure occurred in this study with those innovations that did not result in a unique product or service. If customers could find alternative products or did not perceive an obvious comparative advantage in the new product (for example, lower maintenance costs), market penetration was usually unsuccessful. If each potential customer required a special demonstration or application study for his situation, the marketing effort was generally beyond the capabilities of a small firm.

In contrast, the successful innovations were cases where either the entrepreneur or the second generation of management had a strong marketing and managerial orientation. The product was unique and either protected (with a patent or a license) or a competitive edge was maintained through technological advancement. In several instances innovations that were successful in industrial or governmental markets helped the client define the state of the art or the current technological limits. In two instances the marketing effort promoted the innovation by defining new feasible standards for regulatory bodies that could

only be met through the use of that technology. Prior managerial experience in the same or related products or markets seems to be associated with successful innovation. Success was also more likely for those innovations that resulted in a standardized product rather than specialty products or systems designs for each customer. Apparently the small firms lacked in-house capability for designing and marketing products for specialty markets.

Early planning for the acquisition of external resources appeared to help the successful innovators. Alternative sources of income (outside employment or other products) during the early phases of innovation may slow the process but provide greater "staying power." A willingness to plan for and bring in additional equity capital during the expansion phase apparently helped several innovators.

Most respondents cited a problem in locating either individual or institutional venture capital in New Mexico and many did not proceed to look beyond the state. A general lack of venture capital for high technology firms was revealed in the study by Flender and Morse (1976). The situation appears aggravated in New Mexico because of a lack of wealth and because of attractive alternative investments with a lower risk, e.g., land development. The private capital markets seem unlikely to become more supportive—particularly those out of state—without changes in the tax structure as advocated by Flender and Morse. Even with greater capital availability for high technology small firms, greater brokering assistance seems to be needed from government agencies or from the private sector. The surveyed small businesses generally lacked knowledge of capital markets, resources for preparing a comprehensive prospectus, and procedures for seeking and negotiating capital infusions.

In conclusion, the greatest contribution to small business in New Mexico from the scientific community seems to be technology transfer at the start-up phase of the innovation process. This has been manifested by people leaving the laboratories to establish their own businesses. After examining this people flow from one laboratory during recent years, the authors concluded that about a dozen technically-oriented employees left

to start new technology-based firms. During the same period, only two licensing arrangements were issued to private firms and one of those firms no longer exists.

In terms of transportation systems, facilities, manufacturing representatives, and commercial infrastructure, the technology-based firms seem adequately supported in the Albuquerque area. Capital appears to be a problem. Two areas of support which warrant further study are the continued technical support necessary to keep a small firm innovative and managerial support for the start-up functions. Both of these issues are believed to be generalizable to other areas where the community looks to a strong scientific complex to foster small technical firms.

Although the technology-based new firm typically brings technical expertise to the innovation process through the owner/manager, this expertise may be lost over time as the innovator assumes more and more nontechnical roles in the growing firm. In addition, technical expertise in one or several fields may not be sufficient to complete product development or set up production processes. To innovate continuously, small firms may need much more extensive technical assistance than is currently available. Just as the agricultural sector has an extensive research and extension service, the industrial sector needs more enabling infrastructure to transfer, adapt and apply existing technology to the needs of small firms. This study reveals that the scientific community does not consider this technical assistance to be part of its mission even where it has the technical competence to do so. This is particularly true for scientific hardware and facilities, especially sophisticated instrumentation that is often underutilized due to its specialized functions. Perhaps this instrumentation could be "borrowed" by small firms. If promotion of technological innovation in small firms is a social objective, it appears desirable to establish more responsibility in government labs and universities for technical assistance to small businesses as a *formal*, if secondary, mission. Resources in the scientific community that already exist could be funded to support technical assistance. An alternative would be the establishment of small industrial research institutes to bridge the gap between

the existing labs and the small firms. Such institutes are used more extensively in other countries such as Canada to support the industrial sector.

The second issue involves complementing the technical expertise of the innovator with managerial talent. Can the business survive while the technically-oriented owner learns experientially the required management knowledge and skills? This study suggests not. Can the technically-oriented owner be formally trained in management—assuming proper training mechanisms exist—while he is simultaneously burdened with the other activities of the innovation process? Or is it possible to effect a "marriage" of technical and managerial capability through a partnership (formal or informal)? This study revealed a consistent reluctance by the technical entrepreneur to accept managerial advice from internal or external sources. (This reluctance was reported by bankers, SBA officials, SCORE members and independent consultants.) In 13 of 19 firms studied, the original ownership was transferred. In the majority of cases, the transfer was necessary to rescue the firm from poor management. In a few cases, the technical entrepreneur recognized his managerial limitations and had the foresight to plan an orderly transfer. Lack of managerial talent seems to be a condition that is characteristic of these high technology firms.

One possible method for ameliorating this condition has been advanced by Hlavacek and Thompson (1976). Their research has shown that a viable alternative for the small, high technology firm is a joint venture with a larger firm that has marketing and management expertise. Such a venture can be successful since it combines the complementary strengths of both partners into a

single unit. In this way, each partner's weaknesses are implicitly recognized and hopefully eliminated. However, the joint venture method requires a search for possible partners. This search is generally initiated by the high technology firm. Since high technology firms in New Mexico seem unable to undertake such searches, there appears to be reason for advocating the creation of a formalized brokering function within the state. The primary objective of this functional entity would be to seek out firms with management and marketing expertise and to match them with high technology firms from this region. If properly handled, this possible solution might overcome some of the roadblocks to innovation discussed in this paper.

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Current Economic Developments in New Mexico

MONTHLY SUMMARY

ILENE KELFER

As the national economy moves closer to recession, economic growth in certain sectors of the state economy is also slowing. For example, the construction sector is currently most affected by economic slowdown due to events occurring at both the national and state level. Recent efforts by the Carter Administration and the Federal Reserve Board to control inflation have reduced construction activity in New Mexico. Although current FED policy was not directly aimed at the housing industry, increased interest rates and lessened availability of credit have caused homebuilding, particularly in Albuquerque, to decline precipitously in recent months. The continuation of tight credit policy will also reduce activity in commercial construction. In addition to the FED's actions, the Carter Administration's attempt to balance the budget may also affect construction in New Mexico. A good deal of the funds for constructing and rebuilding New Mexico roads and bridges comes from the Federal Highway Administration (FHA). As of March 14, 1980, nearly \$8.75 billion of their funds have been temporarily frozen, halting several public construction projects and laying off large numbers of construction workers. The federal government is now attempting to reallocate highway monies to the states, but many feel that New Mexico's share is disproportionately low.

Another problem for public construction in New Mexico originates at the state level. Construction of many public projects may be impeded by a statutory 8 percent ceiling on the interest which may be paid on bonds sold by government entities in New Mexico. Since other in-

terest-bearing instruments currently pay significantly more than 8 percent, many school and municipal bonds may not have buyers.

A look at aggregate economic activity in January, 1980 indicates a slowing in the state economy. Total employment rose by 3.4 percent (SA) compared to January, 1979. This figure exceeded year-over-year growth for the previous two months by more than a percentage point. However, despite increasing growth in employment in the past few months, total unemployment in January rose by a huge 27.5 percent (SA) compared to January, 1979, bringing the unemployment rate up to 7.9 percent (SA). The civilian labor force grew at a rather substantial rate of 4.9 percent (SA), after showing year-over-year growth of less than 2.4 percent (SA) in the previous two months.

As mentioned previously, construction has suffered due to current national and state economic conditions. Nonresidential construction contracts declined by 24.2 percent in January compared to year-earlier figures. Nonbuilding contracts fell by 22.3 percent. In addition, residential building permits, an indicator of future economic activity in housing, declined by 21.2 percent (SA) in January compared with January, 1979.

Tourism also showed some weakness. During the past two months the number employed in lodging, which is considered a good indicator of tourist activity, has shown negative growth over figures for the previous year. In January lodging employment continued to decline by 1.1 percent (SA). Part of this decline may be attributed to higher gasoline prices and continuing inflation.

However, visits to national parks in New Mexico in January rose 22.7 percent above year-earlier figures.

Most of the other nonagricultural sectors in January continued to show growth similar to patterns established in 1979. For instance, the numbers of workers in retail trade in January grew by 6.7 percent (SA), exceeding its average annual growth of 5.6 percent during 1979. Expansion of wholesale trade employment in January grew at a year-over-year rate of 5.1 percent, which was slightly less than its average rate in 1979. Growth of workers in the TCU sector in January grew slightly less than in 1979, expanding by 5.1 percent. Employment in manufacturing demonstrated year-over-year growth in January of 4.3 percent (SA), while the number of hours worked in this sector expanded by 0.8 percent (SA). Service workers grew by a substantial 7.4 percent (SA) in January, rebounding from very weak activity in 1979. Finally, employment in government was up from year-earlier figures. State government expanded at a brisk pace (8.1 percent) in January due to the conclusion of school holidays.

Banking activity in New Mexico was mixed. Bank debits measured \$13.247 billion in January, up substantially from year-earlier figures. Time deposits in January rose by 9.7 percent, while demand deposits declined by 1.2 percent. This activity may be explained, in part, by the new special savings accounts which permit automatic transfer of funds to checking accounts. As these new accounts proliferate throughout the state economy, the significance of separate demand

and time deposits statistics may diminish. Savings and loan activity in January demonstrated 11.5 percent growth in total savings deposits. New savings and loans received expanded by 28.0 percent.

The mining sector continues to lead the state in terms of economic growth. Petroleum production grew by a modest 2 percent in January compared with year-earlier figures. Natural gas production crept up by 1.5 percent. However, coal production rose substantially (21.1 percent) over figures for last January. This marked quite an improvement over December's decline in production of 23 percent.

In summary, the New Mexico economy in January followed the national trends and showed signs of weakening. Unemployment in New Mexico rose to nearly 8 percent of the labor force. Construction was clearly the weakest sector due to high interest rates, limited availability of credit, and federal budget cuts for public construction. Activity in the tourism-related sectors was mixed with lodging employment down slightly. Growth in all other nonagricultural sectors was generally similar to growth patterns established in 1979. The outlook for the state economy, however, is one of continued slow growth. If the current construction lock-out in New Mexico continues, the construction sector could suffer even more losses than previously anticipated. And the federal government's proposal to cut approximately 50,000 CETA jobs in the state will reduce state and local government employment in the next year.

ECONOMIC INDICATORS

	Quarterly Averages			
	1979			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
1. GENERAL				
Civilian Labor Force ¹ (000)	519.6	536.3	545.3	546.9
Seasonally Adjusted*	533.8	533.6	536.1	544.9
Total Employment ¹ (000)	484.5	501.1	510.9	511.4
Seasonally Adjusted*	500.2	498.3	500.9	508.9
Unemployment ¹ (000)	35.1	35.1	34.4	35.4
Seasonally Adjusted*	33.6	35.3	35.2	36.0
Unemployment Rate (%)	6.8	6.5	6.3	6.5
Seasonally Adjusted*	6.3	6.6	6.6	6.6
Weekly New Unemployment Insurance Claims	1,436.0	1,171.7	1,114.0	1,362.7
Seasonally Adjusted*	1,252.8	1,283.0	1,220.3	1,318.7
Nonagricultural Wage/Salary Employment ² (000)	446.7	461.7	467.0	470.6
Seasonally Adjusted*	455.2	459.1	462.0	469.6
New Business Incorporations	237.7	240.7	243.3	298.0
Business Failure Liabilities (\$000)	58.0	0.0	na	na
2. AGRICULTURAL RECEIPTS				
From Livestock and Products (\$ mil.)	46.6	48.4	49.1	136.4
Seasonally Adjusted*	69.2	58.5	na	na
From Crops (\$ mil.)	12.7	10.6	17.0	40.2
Seasonally Adjusted*	19.2	15.7	na	na
3. MINING PRODUCTION				
Petroleum (000 bbls.)	6,454.2	6,578.6	6,663.3	6,763.7
Natural Gas (bil. cu. ft.)	95.7	95.4	94.7	99.5
Seasonally Adjusted*	93.7	96.8	97.4	na
Copper Ore (000 tons)	13.8	16.6	15.8	15.0
Coal Production (000 short tons)	1,052.0	978.3	944.0	1,023.0
4. CONSTRUCTION				
Residential Building Permits (\$ mil.)	24.8	30.1	25.7	13.7
Seasonally Adjusted*	23.6	26.5	25.8	16.7
Residential Construction Contracts (\$ mil.)	40.8	48.8	40.5	37.1
Seasonally Adjusted*	41.2	44.5	39.0	40.7
Nonresidential Construction Contracts (\$ mil.)	16.1	26.0	28.5	35.1
Nonbuilding Construction Contracts (\$ mil.)	18.2	15.3	26.3	16.6
5. MANUFACTURING				
Employment ² (000)	33.6	34.7	35.0	35.5
Seasonally Adjusted*	34.3	34.8	34.6	35.0
Average Weekly Hours	39.4	39.5	39.3	40.0
Seasonally Adjusted*	39.4	39.7	39.6	39.6

ECONOMIC INDICATORS (continued)

			Percentage Change				Percentage Change		
1979			I 1978-	II 1978-	III 1978-	IV 1978-	Nov. 78-	Dec. 78-	Jan. 79-
November	December	January	I 1979	II 1979	III 1979	IV 1979	Nov. 79	Dec. 79	Jan. 80
544.0	544.7	542.5	3.1	1.7	1.2	2.5	2.4	2.3	5.1
543.8	547.6	560.2	3.0	1.8	1.2	2.5	2.4	2.3	4.9
509.7	508.5	496.6	2.4	0.6	0.3	1.6	1.8	1.4	3.4
508.7	511.1	516.2	2.4	0.6	0.2	1.7	1.8	1.4	3.4
34.1	36.2	45.9	12.4	20.6	17.7	16.6	11.4	16.8	27.5
35.1	36.6	44.0	12.7	20.7	17.5	16.5	11.3	16.7	27.4
6.3	6.6	8.5	9.7	18.1	16.7	13.5	8.6	13.8	21.4
6.5	6.7	7.9	9.4	18.7	16.3	13.6	8.8	14.2	21.3
1,391.0	1,423.0	1,804.0	5.8	0.7	- 2.6	4.6	13.8	0.9	3.3
1,381.3	1,301.9	1,309.1	5.4	- 0.1	- 3.2	4.8	13.9	1.3	3.6
469.5	471.5	469.0	4.8	4.0	3.1	3.8	4.1	3.2	6.1
469.5	471.0	481.0	4.7	4.0	3.0	3.8	4.1	3.2	6.2
287.0	257.0	na	26.9	9.4	- 4.3	47.8	60.3	19.0	na
na	na	na	NA	0.0	na	na	na	na	na
86.8	40.1	na	31.5	14.4	6.3	7.9	8.0	- 10.4	na
na	na	na	30.9	14.5	na	na	na	na	na
36.4	37.8	na	19.0	- 5.8	21.9	11.9	15.1	45.5	na
na	na	na	13.7	- 10.1	na	na	na	na	na
6,648.8	6,775.9	6,680.9	- 7.7	- 5.8	- 3.5	- 0.9	- 1.2	0.7	2.0
99.4	102.3	100.6	- 2.8	1.1	0.8	1.6	2.1	1.4	1.5
99.1	na	na	- 2.8	1.1	0.7	na	2.2	na	na
14.8	13.5	na	3.8	47.1	49.7	25.7	14.8	32.8	na
1,043.0	783.0	1,342.0	5.6	- 0.4	- 12.9	- 2.8	4.3	- 23.0	21.1
14.9	8.1	14.7	- 7.9	- 1.0	- 11.1	- 33.9	- 35.4	- 61.3	- 20.9
15.2	9.5	16.9	- 11.4	- 0.6	- 11.8	- 31.9	- 36.2	- 61.3	- 21.2
26.5	24.0	40.3	8.9	9.7	- 6.1	6.8	- 21.5	- 10.4	11.3
31.4	34.0	44.5	9.8	10.0	- 5.8	2.7	- 21.4	- 9.4	11.2
16.7	59.1	19.4	- 1.9	84.6	64.1	40.1	- 25.3	522.4	- 24.2
9.6	2.5	9.9	1.5	- 58.4	6.6	- 1.4	23.9	- 85.6	- 22.3
35.6	35.3	35.2	3.6	5.4	2.8	3.7	4.1	3.8	4.5
35.1	35.0	35.9	3.6	5.4	2.9	3.7	4.0	3.9	4.3
39.9	40.3	39.3	- 1.4	0.7	2.2	2.6	1.8	2.3	0.8
39.5	39.7	39.5	- 1.6	0.7	2.2	2.6	1.8	2.4	0.8

ECONOMIC INDICATORS (continued)

	Quarterly Averages			
	1979			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
6. <u>TRANSPORT./COMMUNIC./UTIL.</u>				
Employment	27.5	27.8	28.2	29.1
7. <u>TRADE</u>				
Wholesale Employment ² (000)	20.8	21.2	21.6	22.0
Retail Employment ² (000)	80.7	82.5	84.3	85.0
Seasonally Adjusted*	83.3	82.4	82.6	84.4
Average Weekly Hours	34.5	35.3	35.8	35.2
8. <u>FINANCE</u>				
Bank Debits (\$ mil.)	5,907.3	10,958.6	8,518.1	9,140.7
Seasonally Adjusted*	5,914.1	10,358.3	8,423.0	9,780.1
New Bank Loans (\$ mil.)	235.1	255.7	270.9	260.6
Seasonally Adjusted*	239.7	258.0	280.3	246.6
Bank Demand Deposits (\$ mil.)	962.5	1,045.3	1,036.4	1,060.0
Bank Time Deposits (\$ mil.)	1,712.5	1,779.1	1,835.0	1,875.2
Total Savings Deposits (Savings & Loan Assoc.) (\$ mil.)	1,779.1	1,814.3	1,852.8	1,925.5
New Savings and Loans Received (\$ mil.)	118.2	115.4	148.1	146.8
9. <u>SERVICES AND TOURISM</u>				
Service Employment ² (000)	85.0	89.0	92.0	88.7
Seasonally Adjusted*	87.6	88.2	88.8	90.1
Lodging Employment ² (000)	8.9	9.4	9.6	8.8
Seasonally Adjusted*	9.4	9.3	8.8	9.2
Visits to National Parks/Monuments (000)	95.3	201.4	251.2	74.4
Seasonally Adjusted*	172.7	166.1	148.5	140.0
10. <u>GOVERNMENT</u>				
Federal Employment ² (000)	35.4	36.6	37.9	37.0
State Employment ² (000)	33.7	33.5	32.0	35.8
City and County Employment (000)	50.7	51.4	48.1	51.8

* Seasonally adjusted figures are economic time series which have had seasonal variations removed with statistical processes. These purely seasonal variations include the effects of: the opening and closing of schools, the annual pattern of seasons (especially applicable to agricultural data), holidays, and other annually recurring events which influence economic activity. By removing these seasonal variations from raw economic data, month-to-month analysis of trends and unusual fluctuations in economic activity is facilitated.

na Not available.

NA Not applicable.

1 Number of persons by place of residence.

2 Number of jobs by place of work.

ECONOMIC INDICATORS (continued)

November	1979		Percentage Change				Percentage Change		
	December	January	I 1978- I 1979	II 1978- II 1979	III 1978- III 1979	IV 1978- IV 1979	Nov. 78- Nov. 79	Dec. 78- Dec. 79	Jan. 79- Jan. 80
29.2	29.3	28.8	7.2	6.1	6.0	5.1	5.4	4.6	5.1
22.0	22.1	22.0	8.5	6.5	4.9	6.3	6.8	5.7	6.3
84.6	86.6	86.7	4.3	1.5	1.6	2.9	3.3	2.7	6.6
84.5	84.6	89.2	4.2	1.5	1.7	3.0	3.3	2.8	6.7
35.2	35.0	33.5	- 2.8	- 1.2	- 1.3	- 1.0	0.3	- 2.8	- 2.0
8,171.1	10,110.9	13,247.0	86.0	272.7	158.3	163.4	130.9	212.1	162.5
8,984.7	11,064.8	na	85.7	271.3	154.2	161.8	130.6	213.7	na
253.5	266.4	298.9	- 0.1	1.3	12.2	- 2.6	- 2.1	2.8	21.5
248.5	242.3	na	0.1	1.2	13.1	- 4.3	- 3.4	3.5	na
1,031.9	1,111.0	949.0	0.1	3.7	- 1.1	0.0	- 2.3	1.7	- 1.2
1,856.9	1,873.3	1,857.7	10.8	12.4	12.3	11.7	12.0	10.0	9.7
1,926.0	1,942.2	1,961.8	17.0	14.7	12.1	12.4	12.8	12.1	11.5
137.3	102.8	200.2	24.1	26.1	51.1	45.2	43.5	5.8	28.0
88.1	88.7	89.6	3.1	1.9	0.8	0.7	0.1	0.9	7.3
89.8	90.9	93.0	3.1	1.9	0.9	0.6	0.1	0.9	7.4
8.8	8.7	8.8	4.0	1.5	- 4.3	- 2.6	- 2.2	- 3.3	- 1.1
9.2	9.2	9.4	3.9	1.4	- 4.3	- 2.6	- 2.1	- 3.3	- 1.1
67.0	65.2	51.2	- 7.6	3.4	- 6.9	- 5.8	- 5.4	10.9	22.7
132.7	145.9	na	- 12.5	8.3	- 6.2	- 3.5	- 10.0	15.2	na
37.0	36.8	37.7	3.8	3.9	5.5	3.4	3.4	2.5	7.1
35.9	35.8	34.9	10.1	6.8	2.0	5.5	5.9	3.8	8.1
51.7	52.0	51.6	1.9	2.1	0.1	3.6	6.8	0.4	3.2

Sources: New Mexico Department of Human Services, Employment Services Division: Section 1,5,6,7,9,10; Dun and Bradstreet, Inc.: Section 1; USDA Statistical Reporting Service: Section 2; Oil Conservation Commission: Section 3; New Mexico Bureau of Revenue: Section 3; Building Inspectors' reports, 18 cities: Section 4; F.W. Dodge Co. (a division of McGraw-Hill, Inc.): Section 4; Federal Power Commission: Section 6; Bank reports (36): Section 8; Federal Home Loan Bank of Little Rock: Section 8; United States Department of the Interior, National Park Service: Section 9.

NUMBER OF BUILDING PERMITS--SELECTED CITIES

	Residential		Nonresidential	
	January 1979	January 1980	January 1979	January 1980
Alamogordo	15	9	4	2
Albuquerque	222	109	10	25
Artesia	2	0	0	5
Carlsbad	3	3	4	0
Clayton	4	0	0	0
Clovis	16	12	6	2
Deming	6	9	0	1
Farmington	6	18	6	4
Gallup	1	2	0	1
Grants	6	7	1	1
Hobbs	7	21	1	2
Las Cruces	40	36	8	3
Las Vegas	1	1	1	0
Lordsburg	1	0	1	3
Portales	5	2	0	0
Raton	1	1	0	0
Roswell	13	18	7	4
Santa Fe	36	13	1	0
Tucumcari	0	1	0	1
Total	385	262	50	54

Source: Individual reports by city building inspectors.

VALUE OF BUILDING PERMITS--SELECTED CITIES

	Residential		Nonresidential	
	January 1979	January 1980	January 1979	January 1980
Alamogordo	\$ 738,500	\$ 374,865	\$ 130,000	\$ 4,000
Albuquerque	11,619,111	7,501,793	2,727,774	5,587,454
Artesia	62,000	0	0	94,500
Carlsbad	94,200	141,300	364,700	0
Clayton	94,488	0	0	0
Clovis	461,611	270,426	279,990	187,140
Deming	218,500	285,650	0	1,574,100
Farmington	207,199	608,080	455,271	189,608
Gallup	42,928	98,552	0	20,000
Grants	151,840	320,077	10,000	17,000
Hobbs	350,000	1,106,000	48,000	213,000
Las Cruces	2,032,531	2,196,300	476,825	498,603
Las Vegas	21,280	28,000	34,000	0
Lordsburg	18,500	0	73,500	132,000
Portales	198,800	74,292	0	0
Raton	19,440	18,720	0	0
Roswell	451,500	963,000	32,400	7,740
Santa Fe	1,770,879	652,000	220,000	0
Tucumcari	0	30,000	0	56,993
TOTAL	\$18,553,307	\$14,669,055	\$4,852,460	\$8,582,138

Source: Individual reports by city building inspectors.

HOURS AND EARNINGS OF PRODUCTION CONSTRUCTION AND NONSUPERVISORY EMPLOYEES

New Mexico

	Average Weekly Hours			% Change Jan. 79- Jan. 80	Average Hourly Earnings			% Change Jan. 79- Jan. 80
	Jan. 1980 ^p	Dec. 1979	Jan. 1979		Jan. 1980 ^p	Dec. 1979	Jan. 1979	
Mining	44.0	45.0	45.2	-2.7	8.92	8.83	7.82	14.1
Construction	34.1	35.5	35.5	-3.9	9.38	9.29	8.70	7.8
Manufacturing	39.3	40.3	39.0	.8	5.67	5.66	5.10	11.2
Durable Goods	39.8	41.1	40.2	-1.0	6.14	6.02	5.45	12.7
Nondurable Goods	38.4	38.7	37.3	2.9	4.89	5.01	4.53	7.9
Communication and Utilities	40.8	41.6	41.4	-1.4	7.55	7.50	7.08	6.6
Trade ¹	33.5	35.0	34.2	-2.0	5.81	5.62	5.34	8.8
Banking	41.0	42.9	40.1	2.2	3.77	3.77	3.58	5.3

p Preliminary.

¹ Excludes eating and drinking places.

Source: New Mexico Employment Security Department.

ESTIMATED CIVILIAN LABOR FORCE AND EMPLOYMENT

	New Mexico			Albuquerque SMSA ¹		
	January 1979 ^r	December 1979 ^r	January 1980 ^p	January 1979 ^r	December 1979 ^r	January 1980 ^p
TOTAL CIVILIAN LABOR FORCE	516,400	544,700	542,500	195,700	205,900	205,800
Employment ²	480,400	508,500	496,600	183,100	192,400	188,500
Unemployment	36,000	36,200	45,900	12,600	13,500	17,300
Percentage of Labor Force	7.0	6.6	8.5	6.4	6.5	8.4
Nonagricultural Wage and Salary Employment	442,100	471,500	469,000	180,600	191,100	187,500
Mining	25,300	27,700	27,400	na	na	na
Contract Construction	32,300	35,600	33,500	14,600	15,500	14,500
Manufacturing	33,700	35,300	35,200	17,400	18,500	18,300
Durable Goods	19,500	21,000	20,600	11,900	12,900	12,800
Nondurable Goods	14,200	14,300	14,600	5,500	5,600	5,500
Transportation and Public Utilities	27,400	29,300	28,800	10,900	12,200	12,200
Trade	102,000	108,700	108,700	46,300	48,900	48,100
Wholesale	20,700	22,100	22,000	12,400	13,300	13,100
Retail	81,300	86,600	86,700	33,900	35,600	35,000
Finance, Insurance, and Real Estate	20,400	21,600	21,600	10,400	11,100	11,100
Services and Miscellaneous	83,500	88,700	89,600	40,900	42,900	41,900
Government	117,500	124,600	124,200	40,100	42,000	41,400
Federal	35,200	36,800	37,700	11,900	12,300	12,500
State	32,300	35,800	34,900	10,400	11,300	10,600
Local	50,000	52,000	51,600	17,800	18,400	18,300

na Not available, less than 50 jobs.

p Preliminary.

r Revised.

¹ Albuquerque Standard Metropolitan Area includes Bernalillo and Sandoval Counties.² Includes labor disputes.

Source: New Mexico Employment Security Department.

Editor's Note: There will be no
Albuquerque Food Price Index in this issue of *New Mexico Business*.

CONSUMER PRICE INDEXES AND INDEXES OF SELECTED CATEGORIES

	U.S. City Average (1967=100)				Revised Series, Wage Earners and Clerical Workers			
	All Urban Consumers		% Change				% Change	
	Dec. 1979	Jan. 1980	Jan. 79- Jan. 80	Dec. 79- Jan. 80	Dec. 1979	Jan. 1980	Jan. 79- Jan. 80	Dec. 79- Jan. 80
ALL ITEMS	229.9	233.2	13.9	1.4	230.0	233.3	14.0	1.4
Food	241.7	243.8	8.9	.9	241.8	244.0	9.0	.9
Housing	243.6	247.3	16.0	1.5	243.6	247.3	16.2	1.5
Apparel and Upkeep	172.2	171.0	6.4	-.7	171.4	169.8	5.4	-.9
Transportation	227.7	233.5	20.4	2.5	228.3	234.1	20.4	2.5
Medical Care	250.7	253.9	10.1	1.3	251.7	254.9	10.7	1.3
Entertainment	193.4	195.3	7.1	1.0	191.5	193.9	6.5	1.3
Other Goods and Services	204.0	206.3	8.3	1.1	203.0	206.0	8.3	1.5

Source: U.S. Department of Labor, News.ALBUQUERQUE¹ BANKING DATA
(\$000s)

	January 1979	January 1980	% Change January 1979- January 1980
BANKS			
Bank Debits	\$3,881,568.5	\$11,754,963.2	202.8
New Loans and Discounts	135,438.5	157,442.8	16.2
Demand Deposits	506,213.8	488,792.5	- 3.4
Time Deposits	860,081.3	950,686.2	10.5
SAVINGS AND LOAN			
Savings Deposits	\$ 794,100.0	\$ 892,700.0 ^p	12.4
New Savings Received	85,700.0	104,400.0 ^p	21.8

^p Preliminary.¹ Bernalillo County for bank information, Albuquerque SMSA for savings and loan data.

Sources: Five reporting banks and Federal Home Loan Bank of Little Rock.

Bureau of Business and Economic Research and FOR-UNM Economic Forecasting Service

are now making available on a subscription fee basis
a quarterly economic forecast of the State of New Mexico.

New Mexico economic indicators currently forecasted:

AGGREGATES

Total Personal Income
Total Nonagricultural Employment
Unemployment Rate
Labor Force

CONSTRUCTION

Employment
Wage and Salary Disbursements
Average Weekly Wage

MINING

Employment (Metal; oil and gas; bituminous coal,
quarrying and nonmetallic)
Wage and Salary Disbursements
Average Weekly Wage

TRADE AND SERVICES

Employment
Wage and Salary Disbursements
Average Weekly Wage (Services Only)

TRANSPORTATION, COMMUNICATIONS & UTILITIES

Employment
Wage and Salary Disbursements
Average Weekly Wage

MANUFACTURING

Employment (durable and nondurable)
Wage and Salary Disbursements
Average Weekly Wage

GOVERNMENT

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An Evolutionary History of the Middle Rio Grande Conservancy District

[This article is based upon chapter two of "Case Studies in the Development of New Mexico Water Resource Institutions: the Middle Rio Grande Conservancy District and Urban Water Pricing," Technical Completion Report, New Mexico Water Resources Research Institute Project No. 1345640, January, 1980. The authors are Brian McDonald, John Tysseling, Michael Browde, and Lee Brown.]

The region of the Rio Grande river below its mountain sources has provided for the needs of several different cultures since the prehistoric Indians first organized the available flows of water using canals to irrigate their small fields. The lands south of the river's origin in the Rocky Mountains are unproductive and arid without irrigation, and the river's water has provided the sustenance of life to many settlements in the region from prehistory to today.

Archeologists have provided evidence of the irrigation works of the prehistoric Indian settlements in the middle Rio Grande valley. It was estimated by the first Spanish explorers in the region (Antonio de Espejo in 1539) that there were 25,000 acres under irrigation when they arrived. With the subsequent colonization of the region by the Spanish and Mexican settlers, these irrigated agricultural communities became larger and more numerous. These community irrigation works were known as "acequias," an organizational form which has since influenced the pattern of development throughout the middle valley's settlement and is a general pattern of organization throughout the Southwest among agricultural settlements colonized during this period.

With the region's colonization by the Anglo in the nineteenth century, the middle valley reached a pinnacle of irrigated agricultural development. By 1880 it was estimated that more than 125,000 acres of extremely productive agricultural land were being irrigated. Many of these investments were soon lost to a very predictable natural river maturation process. The turbulence of the water's mountain origin gives way to a slow meandering river about 100 miles south of the Colorado-New

Mexico border (see map, Figure A). As the stream slows, it must drop its load of silt and alluvium which is easily carried in its former turbulence. This process was also enhanced by the human attempts to control the river's flows and make use of its seasonal runoff patterns with small reservoirs and irrigation diversion works. With the wide meandering river bed and its corresponding aggradating alluvial plain, the water table of the middle river valley began to rise, and the region became susceptible to seasonal and flash flooding.

The normal hydrologic maturation of the middle Rio Grande valley brought much hardship to the settlers during the years after the 1880 pinnacle of development. In 1920 it was estimated that irrigable acreage had been reduced to about 40,000 acres. The investments made by individuals in the middle valley area served by community acequias were continually threatened by floods, and many of the formerly irrigated lands had given way to swamp, alkali deposits, and saltgrass. In many areas of the middle valley, the water table had risen to less than four feet, and it was estimated that as much as 60,000 acres of the valley was seeped and nonirrigable. The meanderings of the river and the poorly organized and sometimes conflicting operations of the community ditches provided for a very unreliable flow of water for irrigation.

It was clear that some central organization of these community ditches and private irrigators needed to be established in the middle valley so that some control over the river's erratic flows could be established. The Governor appointed an investigative commission, and a concerned group of citizens formed the Middle Rio Grande Reclamation Association to study possible methods of

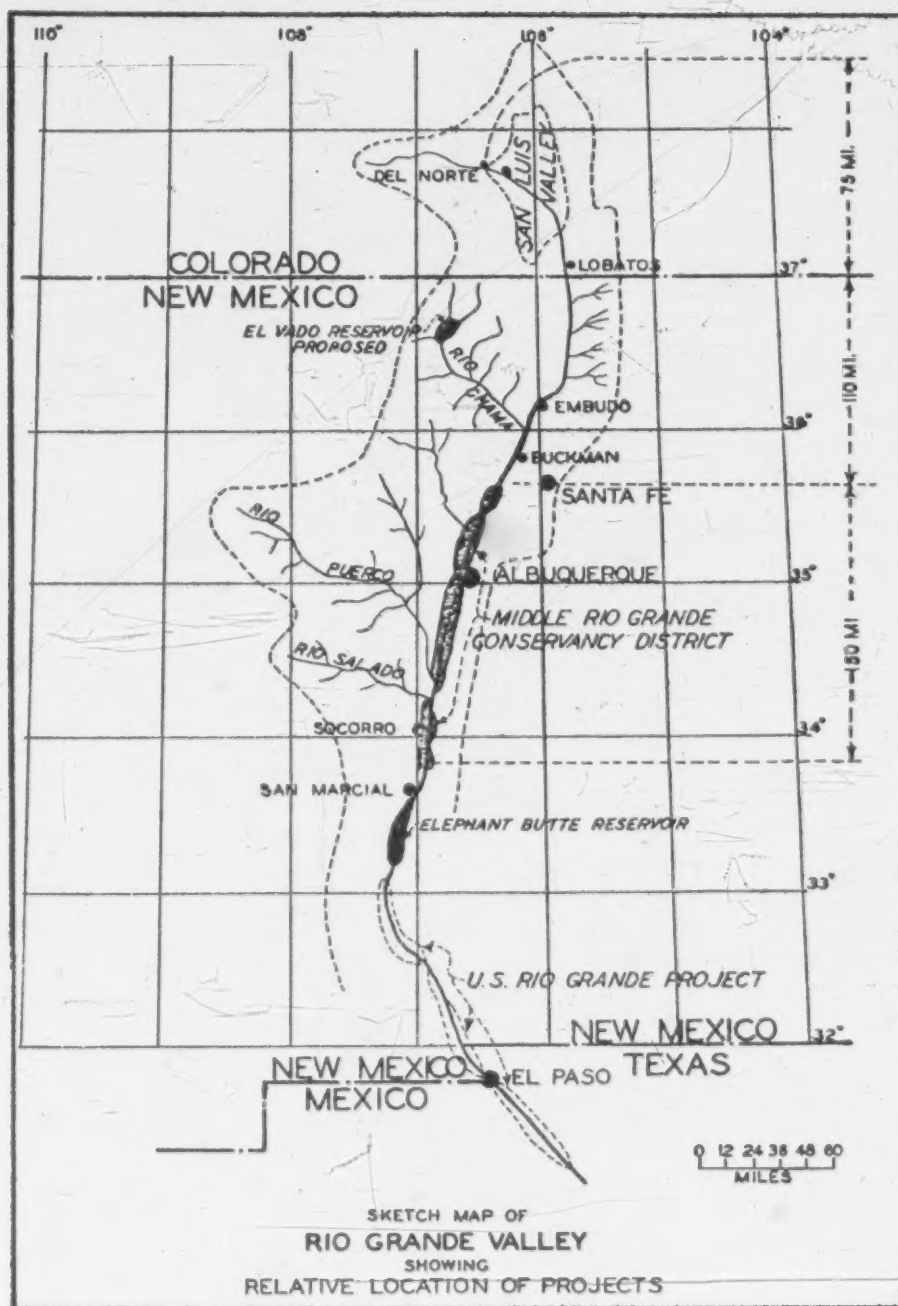


FIGURE A

controlling these increasingly unpredictable flows. In 1923, the Governor's commission recommended that the legislature adopt a law modeled after a Conservancy Act already in existence in Ohio. The ensuing Conservancy Act of 1923¹ adopted by the New Mexico legislature allowed the formation of the Middle Rio Grande Conservancy district (MRGCD) as a political subdivision of the State of New Mexico, a body corporate, with all the powers of a public or municipal corporation. It was hoped that the institutional capacities of the MRGCD could accomplish the drainage of the formerly productive seeped areas of the valley, develop river control facilities to protect the property of the valley from the increasingly destructive river flows, and provide an organized system of river diversions and irrigation delivery works which might expand the productive areas and enhance the economic development of the valley region.

The Organization of the MRGCD

The original group of individuals who organized the Middle Rio Grande Reclamation Association, and the subsequent MRGCD, were a small group (140 at the association's first meeting) of concerned property holders in the middle valley who represented primarily business interests of the valley—not the interests of the agricultural community. These individuals felt that such an institutional arrangement could serve to improve the value of their investments and encourage the general economic viability of the middle valley region. This small group of individuals represented strong financial and political influence within the region (and state), and it can be fairly stated that the potential for the formation of the MRGCD was greatly enhanced by the nature of this influence. This original group of organizers spearheaded the district's formation, with much of their claimed support evidenced only by the silent acquiescence of many of the beneficiaries of the proposed project. The calm of the Conservancy Act's approval was followed by several incidents which would suggest the unanimity of the proposed beneficiaries might not have been as strong as originally perceived (or portrayed) by these organizers.

Several petitions were filed in District Court

protesting the formation of the MRGCD prior to its approval in August of 1925. The first of these petitions claimed support of more than 4,000 landowners representing nearly 430,000 acres situated within the proposed district. This petition also claimed that the Conservancy Act of 1923 was unconstitutional on the grounds that it provided for the confiscation of property without due process and that the Act provided for the formation of the district by a "... ridiculously [ridiculously] small minority of people residing in the district" and "... subjects a majority of the land owners and the majority of the lands within the proposed district" to the wishes and desires of this minority.² This protest also suggested that the construction contemplated by the proposed district would be so expensive that the debt obligation would be both burdensome and confiscatory in that the obligations would be "... beyond the financial possibilities of these protestants, and contrary to their best interests." This protest also contained an expression of doubt that the cost-benefit projections which had been done by the district's organizers were proper and correct. (These projections had been published by Rio Grande Association in August, 1923.)

These and similar complaints were presented several times in District Courts, but the protestants were unable to prove that they represented a majority of landholdings within the proposed district—particularly in light of a contested report provided to the Court by the Country Treasurer certifying the property holdings of the protesting parties. In the final hearing prior to the formation of the MRGCD, the Court ruled that:

"... under the terms of the law, there is not a great field to be occupied in the hearing; that is, if the district is petitioned by the requisite number of signers, and there is not a sufficient [sufficient] number of objectors, the court, under law, is directed to order the creation of the district, so it seems to me that the main issue is the constitutionality [constitutionality] of the law."³

The court stated that it was forced to accept the contested Treasurer's Certificates while admitting that possible inaccuracies might have been contained in statements of the protestants' property holdings. The judge's decision also stated

that the protestants had "... little reason to fear lack of proper protection under the law."

On that same day (August 26, 1925), an order establishing the MRGCD was filed in District Court. This order states the purposes of the District's formation: a) flood protection, b) regulation of the stream channel, including widening and deepening, c) regulation of streamflow, d) elimination of flood hazards, e) reclamation and drainage of wet lands to provide for the irrigation of all lands within the District and f) construction of delivery facilities to make all arid and unproductive lands adjacent to the river again productive. There is clear indication that the primary intent of the District was to provide flood control and land reclamation benefits, with some lesser importance assigned the development of extensive irrigated agricultural developments. This order also stated that "... the public safety, health, convenience and welfare will be promoted by the organization of the conservancy district," a purpose assigned the District which will be described in a more contemporary setting later in this discussion.

The official establishment of the MRGCD by the court did not prevent continued protests over the Conservancy District's formation and operation. There were continuing legal efforts to block the district's accomplishment of its designated tasks for several years after its decreed organization. In the continuing tradition of western politics, there were armed confrontations between the district's Board of Directors and disgruntled irrigators when construction threatened to temporarily curtail supplies of water to those irrigators' lands. An amusing incident (although conceivably not so for board members present) occurred when the construction crews of the district attempted to cross the Los Chayez community ditch, angering the irrigators served by that ditch, and resulting in the board members, who were present to mitigate the difficulties, scurrying up the boom of a dragline as an avenue of escape from the angry residents.

The original order allowing the district's formation described its jurisdiction as extending from the Indian Village of Cochiti at the northern end of the district, south 150 miles to the town of San Marcial at what is now the northern end of

Elephant Butte reservoir. This area included portions of Sandoval, Bernalillo, Valencia, and Socorro Counties and the towns of Albuquerque, Bernalillo, Los Lunas, Belen, and Socorro. Also located within these boundaries were Indian lands of the Cochiti, Santo Domingo, San Felipe, Santa Ana, Sandia, and Isleta Pueblos; these Indian lands were later recognized as having superior rights to water delivery from the MRGCD works, as well as other rights which were detailed in subsequent contracts between the MRGCD and the U.S. Department of Interior.

These original boundaries encompassed 277,760 acres which were estimated to have a net irrigable area of 128,787 acres and a total benefited area of 132,724 acres, including 28,500 acres of Indian lands. These figures are a far cry from the projections made by the preformation study conducted by the Middle Rio Grande Association in which it was asserted that the proposed district could serve 500,000 acres of irrigated cropland with a highline canal and from which the valley would derive benefits of \$13 million at a cost of \$4.5 million.⁴

In early 1928 complaints were filed which led to the adoption of the Modified Official Plan by the District Court on August 15, 1928. This plan has served as the sole planning document for the MRGCD since its approval. There are now slightly more than 123,000 irrigable acres of land included in the MRGCD's boundaries, of which more than 87,000 acres are irrigated at the present.

Since its formation, the District has completed nearly all projects originally contemplated, including the construction of El Vado dam and reservoir to provide assured irrigation flows and flood control; four diversion dams (the Cochiti, Angostura, Isleta, and Acacia dams); and construction and rehabilitation of 181 miles of levies, 345 miles of drains, and 1,370 miles of irrigation canals, laterals, and ditches. The District was also a participant in the development of the San Juan-Chama transbasin diversion completed in 1973. The MRGCD is now governed by an elected Board of Directors, who are all either irrigators or closely tied to the agricultural community. This shift in administrative organization from service to nonagricultural interests to an agricultural

emphasis is a recent development and requires significant additional explanation.

MRGCD's Institutional Role in Allocating Water Resources

There were more than 70 community ditches eventually organized by the Conservancy, and all these properties were conveyed to the control of the MRGCD by the Court as the necessary delivery works were completed. The decreed formation of the MRGCD by the Court also explicitly conveyed to the District all water rights which had formerly been only implied by the appropriation of water to beneficial use by these irrigators. The debt obligation owed the District by these various property holders took the form of real property liens on the lands owned by all benefited by the District's improvements, with annual payments based on ad valorem taxation.

The MRGCD is responsible for the delivery of water to the irrigators of the District, the maintenance of the various delivery facilities, as well as the protection of property located in the District from flood damage and loss. The only official standing that these purposes have is the original authorization of the District's formation by the Court in 1925 and the Official and Modified Official Plans approved by the Court in the late 1920s. Although there have been some administrative revisions since the initial formation of the institution, there has never been any attempt to restate or in any way significantly modify the purpose of the MRGCD since its inception.

What must be immediately recognized about the operations of the MRGCD is that, contrary to the assigned purposes of the most frequently observed water institutions in the western states, the MRGCD's purposes are not limited to just the construction and maintenance of an irrigation delivery system. In most localized areas of the West where water resource developments have occurred, the commonly observed "water institution" is an irrigation district or mutual irrigation company managed for the *exclusive* purpose of providing benefits to a well organized irrigation community. In the case of the MRGCD, the institution is described instead as a "conservancy" with a set of varied and diverse functions in addition to the traditional irrigation district functions.

These additional functions include river control and channel maintenance, flood control, land reclamation, and a more general fiscal responsibility to a broad range of beneficiaries.

There are many diverse "beneficial uses" to which water resources may be appropriated by a society. Any institution which is formed for the purpose of serving many of the possible applications is also subject to a continuing evaluation of changing social needs. As such, a conservancy is likely to encounter frequent conflicts over which of the institution's various purposes should be emphasized. Without a single central purpose, the political coalitions which can develop within this multipurpose administrative structure can be anticipated to greatly influence the circumstances and practices of the conservancy's administration. The benefits described in the conservancy's formation may be broad, but the priorities assigned the completion of these purposes will directly reflect either the most urgent purpose or the purpose with the strongest (i.e., political) contingent of beneficiaries. These patterns of social organization and political influence can be directly observed within the structure and evolution of the MRGCD, and this general administrative pattern will serve to structure the analysis of the MRGCD's administrative evolution which follows.

An Administrative History of the MRGCD

The Conservancy Act of 1923 provided for the formation of the MRGCD and for the details of its supervision by the District Courts of the state. All proceedings, activities, and actions of the MRGCD are subject to the jurisdiction of the Conservancy Court which is comprised of the Judges of the Second Judicial District who review the decisions and actions undertaken by the District's Board of Directors. Until recently the District Court was also responsible for the appointment of the District's Board of Directors, a relationship which has provided for a conservancy responsive to and essentially administered by the judicial system of the state.

The first appointed Board consisted of three members, who in turn served as the administrators for the three departments created in the District's first year of operations (Administrative, Engineering, and Legal Departments). A Prelim-

inary Fund Assessment of 25 cents per acre was made in Rio Arriba, Santa Fe, Sandoval, Bernalillo, Valencia, and Socorro Counties—the counties through which the Rio Grande flows from the northern border of the state to the southern end of the conservancy. This area is much greater than the total area now benefited by the MRGCD works and provided the original capital required to get the planning and construction activities underway. The final obstacle to the commencement of construction and operations was cleared by the December 12, 1925 decision in which the New Mexico Supreme Court found the Conservancy Act of 1923 constitutional.

During the first three years after the District's formation in 1925, an Official Plan for the District was developed. After several modifications, this planning document was approved by the Conservancy Court on August 15, 1928.⁵ This Modified Official Plan (from here on referred to as the Official Plan or simply as the Plan) has since served to guide all the activities of the MRGCD and has been subject to little substantive revision during this period. These plans contemplated construction amounting to \$11,828,000 although the District was to be responsible for only \$9.6 million of this total due to the anticipated repayment by the Federal Government of the costs required for construction of MRGCD facilities on Indian lands. In this same year the District Court approved the original Conservancy Appraisal Record which assessed the benefits from the planned MRGCD to be \$22,088,058.

In June of 1930 petitions were presented in the Conservancy Court requesting that the appointed Board of Directors be replaced, stating that their actions had been irresponsible and detrimental to the smooth operation of the District, and asserting that the actions of the current Board had been politically motivated. These petitions resulted in the removal of the five Directors serving at the time although there was substantial consideration of the matter before this removal action ensued. In the opinion of Judge Milton J. Helmick, entered in the District Court files June 20, 1930:

The present Board members were selected by an unofficial political group in March, 1927, when the Conservancy was threatened with extinction at the hands of the Legislature then in session. Judge

Owen and I accepted the Board so named for us and signed a formal appointment in return for the promise of the passage of a new Conservancy Act, and as a means of saving the Conservancy project from wreckage. In this fashion the present Board supplanted the one originally chosen and appointed by me. This spring I became alarmed for the welfare of the Conservancy, and about a month ago I waited upon the Board members and requested their resignations on the sole ground that I believed a change in the Board would quiet much clamor and restore the confidence of the native people in the project.

I do not think it can be doubted that the Board has not used means nor exercised patience sufficient to acquaint the native farmers with the Conservancy project, adjust their troubles and dispel their fears. In his brief Mr. Sutherland says: "If the Board could view the farmers' problem with the same sympathetic attitude that they have the wishes of the bondholders, and make a fair fraction of the concessions they have made to the latter, there is no shadow of a doubt that somehow to ameliorate the situation and win the people could be found. They have not seemed to want to win the people."

... The Board has perhaps been so much concerned with the financing and engineering aspects of the project that it has ignored the equally important human element. In his report Taylor, Amicus Curiae, aptly says: "However irksome, a successful public official must maintain friendly contact with his constituents or his conscientious efforts will be imperilled."⁶

This decision provides much evidence of how the MRGCD was originally conceived and operated by its supporters, with some evidence of the necessary political relationship between the organizers and the judicial/legislative administration which provided the "officiality" of its formation. This decision provided a Court endorsed "attitude" for guiding the administration and operation of the MRGCD for many years to come. There is clear evidence that the District Court was operating on the premise of serving the "best interest" of the beneficiaries in the infant District; however, there must also be recognition that this responsibility adopted by the Court would probably not be considered to be within the scope of the Court's jurisdiction by today's society. The decision suggests that those responsible for the administration and operation of the District needed to substantially increase their

awareness of their political role as agents charged with serving the needs and wishes of their constituency and their sense of responsibility and accountability to the *individuals* who make up that constituency. This need surfaces time and again in the history of the MRGCD.

The economic depression which followed the Stock Market Crash of 1929 brought hardship on attempts to make the MRGCD a self-supporting venture. The original \$8.7 million bond issue encountered great difficulties with only \$2 million sold by the mid-1930s. It appeared in 1932 that no other option existed to sustain the MRGCD but the sale of the remaining outstanding bonds to the Reconstruction Finance Corporation at 90 percent of their par value, thereby placing all properties of the District under financial obligation to essentially one central institution. This relationship has persisted to the present. By 1934, with renewed financial support, the District had completed more than 95 percent of all the work contemplated in the Official Plan.

After clearing the constitutionality hurdle, the predominant legal confrontations for the first several years of operation were the acquisition of rights-of-way easements to the property and works of the community acequias and the conciliation of landowners affected by these easements. In several of these cases Court injunctions were required to prevent the parties served from interfering with the required works of the MRGCD construction crews. What is somewhat remarkable is that there are no records in the District Court files that suggest any attempts were made to acquire these right-of-way easements until late 1930, more than five years after the District's formation and two years after the approval of the Official Plan. Although little more need be said, the initial operations of the MRGCD were not smooth, nor were the views of the existing property holders given little more than cursory consideration in the years immediately following the District's formation. The Annual Report for fiscal year 1936 states that all the construction contemplated under the Official Plan had been completed, except for a minor amount of supplemental work added after the Plan's approval in 1928.

The onset of the next decade brought renewed

interest in the flood control and river channelization efforts contemplated as part of the original purposes of formation. The Annual Reports of the early 1940s repeatedly recognize the priority which must be assigned control of the river, with this protection needed for the continued development of the urban areas and to further protect the irrigation investments. Corresponding to the interest in increasing river control, there was recognition in these Annual Reports that the work contemplated was far beyond the capability of the MRGCD alone and that a large part of the financial responsibility for these works belonged to the federal government. It was hoped that this further relationship with the federal water management programs (already existing in other regions) would insure better upkeep of the flood protection works and relieve the District of its debt interest responsibilities. The need for these flood control works was dramatically reinforced during the springs of 1941 and 1942 when extremely high flows on the river caused some moderately extensive damage in several areas protected by MRGCD flood control works. In 1944 the District received \$500,000 in federal emergency flood relief funds for this damage.

The Board of Directors adopted a resolution in 1942 requesting that the Bureau of Reclamation and the Army Corps of Engineers continue studies and surveys of possible flood control works which could be undertaken in the valley and conveying all necessary right-of-ways to District property as were required for the completion of any of these flood control works. On August 4, 1944, the District accepted responsibility for the first of the flood control works completed by the Army Corps of Engineers. With this acceptance, there was also recognition that the levels of flood flow which occurred in 1941 would result in substantially increased damage because of the continuing aggradation of the river's bed. The attempts to control the river's natural maturation seem to be, at best, at a standstill since the MRGCD programs were initiated in 1925.

In 1941, the District undertook a reappraisal of the benefited properties, basing these assessed benefits on a uniform rate of \$95.00 per acre. Total (re)appraised benefit to all of the properties included in the MRGCD was reported to be \$18.8

million. This is less than appraised benefits in 1928. This reappraisal mechanism, in conjunction with the adjustment in the percent maintenance levy assessments, provided for the variable financial needs of the district's operation and maintenance for several years. There were many minor legal disputes during this period contesting the appraisal of benefits. It was not until the District was required by the federal Reclamation Act to change its methods of assessment that this system was dismantled.

A statement regarding the continued subdivision of property, primarily within the Bernalillo County portion of the District, is repeated in nearly every Annual Report from 1941 until the present. The pattern of the increasing urbanization of the constituency is considered initially as a potential blight on the future of the Conservancy; however, there is also later recognition that the shift to a more urban population in this area made more water available to the irrigators downstream than would have been available under the drought conditions of the decade which followed the flooding of 1941 and 1942. The original purposes of formation and the battles which had been fought since the District's inception had been a result of an overabundance of water. For the first time the District was forced to face conditions of water shortage in the mid-1940s. Further discussion of this prolonged water shortage will be left to the next section as the administration of the District did not have the benefit of hindsight to guide their actions, and the continuity of this historical narrative would be impaired if facts are provided which were beyond the experiences of those who were forced to choose the administrative course followed by the MRGCD.

The management of the irrigation facilities of the MRGCD became the increasingly dominant concern of the administrative operations of the District in the mid-1940s. The constraints placed on water users by the treaty originally negotiated in 1906 with Mexico and the limitations resulting from the negotiations concluded with the Mexican Water Treaty of 1944 placed extremely tight limits on the available supplies of water. Additionally, the interstate agreement between Colo-

rado, New Mexico, and Texas (1939) apportioned specific water allotments to each state and provided a system of credits and debits for water delivered to points within each state. These Rio Grande Compact obligations created a situation where the Conservancy was increasingly reliant on the available flows of the river and was unable to make use of the irrigation and flood control reservoir for any purpose but delivery of water obligations under the Compact. The shortage of water for irrigation "on demand" and the recognition that limited flows provided substantial loss of the available water to percolation through the ditch banks suggested several modifications to the District's operations. The irrigation management techniques employed by the District in the operation of the irrigation delivery works of necessity had to be improved, and with these water shortage conditions came increased operation, maintenance, and rehabilitation expenses during this period.

In 1945 a group of concerned citizens formed the Rio Grande Flood Control Association. This association was made up of residents and property owners of the urban areas of the District around Albuquerque. This group acted as a lobbying agent, primarily in Washington, D.C., and eventually succeeded in attracting federal attention to the increasing problems of flood control in the middle valley. Following several years of discussion, the resolution of legal details by the attorneys for the MRGCD, Bureau of Reclamation and the Army Corps of Engineers, and the preparation of reports which were subsequently presented to Congress, there was congressional action in 1948 approving funds for a project known as the Rio Grande Flood Control Project. Although there was authorization of \$3.5 million in 1948, funding was not actually appropriated for several years, and the first construction on these works was begun by the Corps in 1950.

It was becoming increasingly clear that the flow of federal money in no way assured the flow of water: the severe drought conditions which began in the mid-1940s worsened in 1950. Great concern was frequently expressed that, if the water supply conditions did not improve soon, there would be a loss of crop investments which

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would threaten production for several years to come and, potentially, the financial integrity of the District itself. From the District's Annual Report, filed November 20, 1950:

"The increase in the cultivated acreage continued and it appears that the water supply problems will soon become serious. We have been saved from a crisis until now because of the urban development of Bernalillo County which cannot go on indefinitely. These and many other difficulties can be cured, or partially relieved, by the contemplated Reclamation program which we hope will be undertaken by the Bureau in the near future."

The Army Corps of Engineers' involvement and the subsequent takeover of District operations and maintenance responsibilities by the Bureau of Reclamation in 1952 did not smooth the stormy seas which had been negotiated in the past. In that same year, the State of Texas filed a suit which alleged that the MRGCD had been operating in violation of the Rio Grande Compact and that the irrigation practices of the District were both inefficient and improper. From the date the suit was filed, the District recognized that this legal issue would require a great deal of attention for several years to come and could potentially threaten the continued existence of the irrigation operations of the District. The protectionism (i.e., water and property entitlements) which was so strictly adhered to in the past was again in the forefront of the administrative concerns although a more imposing appearance was now provided by the District's association with the federal government.

The mid-1950s brought the completion of all necessary contracts between the Bureau of Reclamation and the MRGCD and allowed the actual appropriation of monies from the federal treasury for the continued construction contemplated by the Rio Grande Project. From the Annual Report for fiscal year 1955, this was considered to be the "... most outstanding year in the history of the MRGCD." More detail of how this relationship developed and why it is considered so vital to the operations of the District follows. The issues and conditions of water scarcity in the West must be included and elaborated upon for this relationship to be brought into proper perspective.

Water and the MRGCD

The water rights laws of New Mexico, a doctrine generally known as the prior appropriation doctrine of water rights, developed along similar lines as did water laws of many western states. This set of legal principles resulted from the frequent need to divert water from the sources of its natural occurrence at a remote location and be assured of access to that source of supply with some degree of certainty. A water right granted under the prior appropriation doctrine is an entitlement to a specific quantity of water from a designated source of supply and applied to a specific "beneficial use." Water rights are of many different qualities, with these qualities pertaining to the assurance of the ability to appropriate a water entitlement from a designated source of supply. A water right is granted with specific priority ranking among the other rights already in existence (e.g., a new appropriation is considered to be junior in priority to all existing rights) and is protected from impairment by any water rights granted subsequently (e.g., later appropriations for the source of supply may not damage the ability of the existing, more senior water rights access to their entitlements). The priority dating of a water right entitlement is based on the first date of appropriation from a source of water. There are several exceptions to this priority principle.⁷ Of note are the priority dates assigned the water rights of the Pueblo Indians and the water rights entitlements concomitant with the lands set aside by the federal government. In the case of the Pueblo Indian Water Rights, the priority date is assumed to be more senior than any other water rights from any source of supply although there is substantial dispute and pending litigation regarding the quantification of these water right entitlements in New Mexico.

The water right entitlements which have been granted to the MRGCD are of four basic types: 1) the water rights for storage in El Vado Reservoir of water which is subsequently released to meet the various needs of the District downstream; 2) the water rights for the purposes of irrigation, with some of these rights having been perfected by their appropriation to use by irrigators prior to the formation of the District (perfected rights)

and those rights which were "created" by the formation of the District and the construction of El Vado to store the previously lost seasonal streamflows; 3) those rights which have been assigned to the Pueblo Indians and for which the District has been assigned the responsibility of delivery to their irrigation works under contract with the Department of Interior; and 4) the water rights made available by the transbasin diversion of water from the San Juan River into the Rio Chama River (a tributary of the Rio Grande) and which were contracted by the MRGCD from the Department of Interior.

These rights are in some ways different but, in total, comprise the water rights entitlements which serve the MRGCD. Several of the rights shown in Table A are stated in terms of the acreage irrigated. To arrive at a specific volumetric quantification of these rights, an approximate figure descriptive of the "average" consumptive use of the crops raised in the middle valley region of the Rio Grande must be applied. The figure used, 2.1 acre-feet per acre, is that currently used by the State Engineer to calculate the consumptive use entitlements for water rights applied to irrigation in the middle valley when there is a transfer of water rights to or from irrigation use. Under New Mexican water law, the puzzle piece which is missing in the middle Rio Grande valley is the adjudication of the perfected water right holdings. In such an adjudication the actual volumetric water right entitlements of all the appropriators of water from the source of supply would be established by the State Engineer and the Courts of the state. In the case of the Rio Grande, the surface and groundwater sources are considered to be hydrologically interconnected and inseparably linked. This judicial ruling would state all points of diversion, quantities of diversion, quantities applied to beneficial consumptive use (and the consumptive use quantity of each right), and the priority date assigned each of the water right entitlements.

The water right "entitlements" which are described in Table A reflect the best available quantification of the MRGCD's water rights. This should in no way be construed to reflect the quantity of water which is actually used by the District in the irrigation operations. Furthermore,

any adjudication of the District's water rights in the future is likely to encounter a challenge that these rights (see Table A) have not been diligently applied to beneficial use. As a hedge against such a claim, the District has repeatedly applied to the State Engineer for extension of time to complete appropriation of all these entitlements as is allowed under state law. Again, there is no pretense that these figures indicating permitted water

TABLE A
MRGCD WATER RIGHTS

Permit #1690	El Vado (first filed September 4, 1923 by Middle Rio Grande Water Association, refiled February 28, 1924, assigned January 16, 1926, application May 27, 1930, approved October 20, 1930). 198,110 acre-feet impounded at reservoir (storage right) Priority Date: September 4, 1923.
Permit #0620	Application for Change in Point of Diversion for 71 Community Ditches (granted January 26, 1931). 123,267 acres irrigated land (total) 80,785 acres with perfected water rights 42,482 acres with water rights under Permit #1690 Priority Date: January 26, 1931, although this would probably be contested in an adjudication of these rights.
Indian (Pueblo) Reserved Rights—(six existing pueblos)	8,348 acres irrigated Priority Date: indefinite, Pueblo Indian Water Rights are considered to be senior to all other rights.
San Juan-Chama—Federal Transbasin Diversion Project	MRGCD Water Rights under Contract for deliveries 20,200 acre-feet (consumptive use right).

*Estimated Quantification
(Consumptive)*

80,785 acres × 2.1 a-f/a =	169,648.5 acre-feet
42,482 acres × 2.1 a-f/a =	89,212.2 acre-feet
123,267 acres × 2.1 a-f/a =	285,860.7 acre-feet
8,348 acres × 2.1 a-f/a =	17,530.8 acre-feet
131,615 acres	303,391.5 acre-feet
	20,200 acre-feet
	<u>323,591.5 acre-feet</u>

rights in any way reflect the actual water rights which would be assigned the District by an adjudication. These figures represent only the acreage which the District is *permitted* to irrigate and serve as some indication of the maximum quantity which could *potentially* be assigned the MRGCD.

The centralization of the control of these water right entitlements by a conservancy results in the homogenization of the various entitlement qualities described above. With the exception of the paramount priority which has been assigned water deliveries to the irrigation works of the Pueblos, there is no ability to discriminate between the differing water right entitlements among the irrigators served by the MRGCD.

For all non-Indian users of the MRGCD's water entitlements, there is no priority assigned any individual use. In the case of a shortage which limits the available quantity of water, all users in the District would be forced to share equally (pro rata sharing) the water which is available. There are several institutional methods which can be and have been employed by the District in such a situation. These methods include voluntary limitation of normal use, alteration of normal delivery schedules, forced curtailment of certain uses, and other mechanisms which would make for the more efficient use of the available water. The fine structuring provided by the assignment of "water rights" might appear to prevent the possibility of water shortage as long as the flows of the river remained near their average levels. This statement has been demonstratively proven incorrect by the history of water's availability in the MRGCD.

When we left the evolving MRGCD in the previous section, a situation was brewing which would lead to much consternation both by the irrigators and the administrative personnel of the District. There had been negotiated interstate and international water delivery obligations to which the MRGCD had been a party. These obligations, as may be recalled, were negotiated at a time when the predominant water problem faced by the District was essentially an over abundance of water and controlling the flood flows on the river. The first 17 years of the District's operations had led to a perceived abundant water supply, but this pattern ended with the floods of 1941 and 1942

and gave way to a drought cycle exacerbated by these contractual obligations.

As the riverbed continued to aggragate and as the natural flows of water lessened, the water users and the District itself became increasingly concerned with the nature of the obligations with which the District was faced. From the 1946 Annual Report:

The Rio Grande Compact governs the use of water in the middle valley and under its terms we were unable to use water which had been stored in El Vado and saved from the previous years runoff. The Compact Commission refused to allow sufficient water releases from the reservoir after July 15 to satisfy New Mexico needs and as a result considerable hardship and crop loss was experienced throughout the entire District. The situation was brought about through continuous waste of El Vado water by the water users of the valley.

This was the most disastrous irrigation season since the completion of the District. There was no spring runoff of snow waters on the Rio Grande and the total runoff on the [Rio] Chama was all retained in El Vado to be spread over the following months [months].

We had been notified by the Rio Grande Compact Commission that due to debit accumulated by the State of New Mexico, no releases from the reservoir storage would be allowed below the 90,000 A.F. level for 1946. Despite repeated pleas the Texas Commission, on advice of the water users and engineers from the Elephant Butte Area, refused to allow any further releases and on July 10th, the outlet gates were closed. Due to extremely dry weather for the balance of the irrigation season over the entire Rio Grande watershed, the district's agricultural losses were immediate and grew more serious as the growing season progressed. The probable loss for the crop year can possibly reach the two million figure. The second most serious result of the water shortage was the filling of the canals with mud and silt. We were compelled to use any water available and this water was to a large extent composed of flash floods which invariably carry enormous amounts of silt, and the maintenance outlook for the ensuing year was rapidly becoming very dismal and probable cost estimated increasing at an alarming rate.

And from the 1947 Annual Report:

The amount of debit water under the Rio Grande

Compact had increased until the amount owed to down river users on August 31 was more than the total capacity of El Vado. It is possible that future releases from storage combined with winter runoff will reduce the debt to a point where we might possibly retain some storage water available to local users. I cannot estimate the total amount of this water but it unquestionably will be far below minimum crop requirements.

The increasingly uncertain water supplies and the problems which were forced upon the beneficiaries of the District had become so critical as to require twenty-four hour supervision of the irrigation delivery system and conversion to less water demanding cropping patterns. Clearly, the assistance of the federal government was becoming increasingly important. Furthermore, it seemed that, regardless of rights to water entitlements, quantities of water sufficient to support the needs of the MRGCD were not available. It is from this set of critical conditions that the relationship between the Bureau of Reclamation and the MRGCD was forged.

*Water Needs and the "White-Hatted"
Bureau of Reclamation*

With the critical water situation in the middle Rio Grande valley by the late 1940s, the MRGCD was searching for *any* federal agency which could address the problems. The proposal presented to Congress in 1947 and 1948 combined the resources of the Army Corps of Engineers, the Bureau of Reclamation, and the MRGCD in an endeavor called the Rio Grande Flood Control Project.

The contemplated project was designed to protect much more land more completely than could be provided by the existing MRGCD flood control works. Further efforts to extensively channelize the riverbed were initiated. With the onset of the 1950s, the flood control programs of the Corps of Engineers received federal funding approval and were begun; but the debt obligations for water deliveries to Texas had been only moderately reduced, and there was an ever increasing acreage cultivated within the District. The negotiations between the District and the Bureau of Reclamation became increasingly frequent, and, at the same time, the drought cycle took a turn

for the worse in 1951. A dismal picture is painted by the following from the 1951 Annual Report:

On the darker side was the continued drought. The past year was one of the driest on record and while fair crops were made through careful distribution of available water, all our reserves were completely exhausted and early in July El Vado was completely dry for the first time in its history. Unless there is a complete change in weather conditions in the near future there will be no crops raised in this area for the next several years.

We also met increasing opposition to our water policy from various people connected with the Rio Grande Compact, and, unless there are some modifications and new interpretations of this contract it most certainly will seriously damage, if not completely ruin, this district. We sincerely hope some solution to this problem can be found as it seems incredible that such a document drawn by so few people could be allowed to act against the well being and even livelihood of so many innocent people living in such a large and important area as the Middle Rio Grande Conservancy District. This is even more amazing when it is admitted that the Middle Rio Grande Conservancy District has carried out its duties under the compact for the delivery of water and that the conditions bringing about the present dilemma are caused by natural phenomena outside our district and most certainly beyond our physical and financial power to control. It most certainly will require cooperation between the affected areas instead of continual opposition to proposed corrective programs in order to arrive at a permanent solution to these difficulties which affect not only our immediate area but large districts in other states.

The 1952 Annual Report announced that the first of the contracts between the Bureau and the MRGCD had been approved, with an agreement by the Bureau to take over the operations and maintenance of the District's works as well as undertake a new rehabilitation program of the existing works. The contract with the Bureau also assigned the outstanding financial debt obligations of the District to the Bureau, with the District required to repay this debt to the federal government free of interest charges. The administration of the conservancy pursued negotiations with the Soil Conservation Service for a study of how a program of runoff and waterflow retarda-

tion, coupled with soil erosion prevention steps, could be accomplished to make better use of the water the District had available—all apparent steps in the right direction and certainly appropriate in light of the suit which had been filed by Texas alleging violations of the Rio Grande Compact and questioning the irrigation practices of the District itself.

The pending suit brought by Texas may have provided the first direct evidence of how valuable the relationship between the Bureau of Reclamation (and, thereby, the Department of Interior) and the MRGCD was: one of the first issues discussed by a Special Water Master appointed in the case was the "indispensability" of including and legally joining the Secretary of the Interior as party to the dispute. This relationship between the MRGCD and the Bureau of Reclamation, whereby the Bureau has direct financial interest in the District and, thus, a direct interest in any litigation which might damage these interests, fundamentally changes the type of action which may be successfully brought against the District. By including the United States in any litigation, as is required because by contract the United States holds legal title to the District's properties, the actions, policies, and administrators of the District are protected by the doctrine of sovereign immunity. This "indispensability" issue has been repeated several times in other litigation and in several instances has served as an effective shield from prosecution. A description of several of these litigations will be returned to after further discussion of the evolving relationship between the District and the Bureau.

All the real property of the District was conveyed to the Bureau under the reclamation contract negotiated during 1954. In that same year the discussion of the conservancy's participation in the San Juan-Chama Project began. Although the drought cycle continued, the Bureau initiated several programs designed to make better use of the water captured in the District's drains, and there were some reasonably good crop yields from the irrigation management improvements. The District was still forced to operate exclusively on the water's availability in the river, and a program encouraging the drilling of wells by individuals within the districts was actively pursued to

ease the pressures on the struggling irrigation system.

On February 1, 1955, all the operation and maintenance duties of the District, with the exception of El Vado, were turned over to the Bureau. Congress appropriated \$11 million to the Bureau of Reclamation and the Army Corps of Engineers as had been requested. These funds were to be used in the Rio Grande Flood Control Program to reconstruct and improve many of the original works of the District. In 1956 the contract between the Bureau and the District was amended to include the operations of the El Vado Dam and Reservoir, and final Congressional approval of the San Juan-Chama diversion project was actively pursued. The San Juan-Chama diversion project was touted as an urgently needed addition to the District's water supply.

The year 1956 was considered the driest year in the history of the District. Only through the additional water supplies provided by wells which had been drilled and through the careful management of irrigation deliveries was the District able to avert a total breakdown in crop production. Construction was nearly completed on the Jemez Dam, and the Abiquiu Dam construction was initiated under a Congressionally funded program known as the Comprehensive Plan of Development for the Middle Rio Grande Project. It was also in 1956 that the middle valley region of the Rio Grande was declared a designated groundwater basin by the State Engineer, thereby rendering much more stringent control on the ever increasing number of private wells in the District.

In 1957 the suit brought by Texas, which had been pending for six years, was dismissed after several discussions of the "indispensability" issue and several appearances before the U.S. Supreme Court. Several programs were initiated to improve the efficiency of the irrigation system, including a phreatophyte eradication program (very high water use, weeds and trees which grew abundantly on the ditch banks). As required by the Federal Reclamation Act of 1902, a new assessment program was developed. The beneficiaries were to be assigned financial obligations on the basis of whether or not their property was greater than five acres and irrigable. The two classes (Class A—greater than 5 acres and irrigable—and

Class B properties) were approved by the Court in May of 1958, with the first assessments based on these classes made in 1959.

It was clear by now to all involved with the District that the programs undertaken as a result of the recently established relationship with the federal government promised to be extremely beneficial to the overall purposes for which the District had been established. Indeed, it could fairly be asked why this relationship was not pursued earlier. The operations of the District seemed to have smoothed significantly as a result, and, although the Bureau could not be credited, even the natural availability of water seemed to be improving. The District had clearly entered a new phase in its continuing evolution, and the years of the ensuing two decades would bring even further stability to what had only several years earlier appeared to be a crumbling conservancy.

The Modern MRGCD

The new Class A/B structure met with only limited opposition when it was introduced and can be said to more equitably assess the benefits derived for the works of the MRGCD because it identifies and makes assessments uniformly based on user classes. Originally, the Class A properties were considered to be any property greater than five acres which could be served by the irrigation works of the District. As could be expected, there were several minor exceptions taken to the original classification of Class A property (approximately 2,030 acres were reclassified after the first assessment), with these properties assessed on a per acre rate set each year by the District's Board. The Class B beneficiaries are assessed a mill levy ad valorem tax based on the appraised value of their property holdings located within the benefited area of the district.

Although this assessment structure may not correctly discriminate between the irrigators and the nonirrigating beneficiaries of the District, it has provided the ability to assign taxation rates according to the variable financial needs of the two principal benefits provided by the District: irrigation to one group of properties and flood control to all properties within the district. Presented in Table B are the Class A acreages con-

TABLE B
CLASS A ACREAGES IN THE MRGCD

Year	Acres
1959	58,117.31
1960	56,085.73
—	—
1972	55,635.82
1973	54,857.67
1974	54,336.64
1975	54,809.16
1976	53,872.64
1977	53,729.51
1978	53,330.11
1979	87,744.85

sidered to have been served as agricultural lands within the District for the years listed. These properties pay assessments based on the per acre rate which is set annually by the District's Board of Directors. Table C presents the most recent assessment records, including total levy assessments and the amount actually collected from these assessments.⁸

The decreasing irrigated acreage pattern shown by the figures provides clear evidence of an observable trend within the agricultural community of the District although the jump in 1979 would indicate that there might be some problems with this conclusion. The sudden jump is the result of the property reclassification undertaken in 1979, with the total acreage change resulting from redefinition of Class A beneficiaries. Class A lands are now considered to be any lands greater than three acres and served by irrigation works of the

TABLE C
CLASS A PER ACRE ASSESSMENTS

Year	Per Acre Rate	Total Levy Assessment	Total Collected Assessments	Percentage Uncollected
1959	\$ —	\$408,735.35	\$407,378.96	0.33
1960	—	337,547.00	335,978.71	0.46
1972	12.04	673,187.70	670,356.94	0.42
1973	12.75	702,151.14	705,065.76	0.00
1974	12.75	695,195.46	693,804.61	0.20
1975	10.16	551,295.96	549,972.95	0.24
1976	9.45	510,621.55	508,852.39	0.35
1977	9.90	532,011.24	510,096.08	4.12
1978	13.40	—	—	—
1979	14.41	—	—	—

District. The pattern of revenue assessments, presented in Table C, provides little in the way of conclusive evidence about the financial management of the District although, when compared with tables to be presented subsequently, it does prove useful. More interesting is a look at the pattern of Class A assessments from the counties benefited by the District (see Table D).

TABLE D
CLASS A TOTAL ASSESSMENTS BY COUNTY
1959-1977

County	Total Class A Assessments	Percentage of Total Class A Assessments
Sandoval	\$ 577,391.72	6.46
Bernalillo	1,480,846.97	16.56
Valencia	4,350,359.55	48.65
Socorro	2,533,499.94	28.33
	<u>\$8,942,098.18</u>	<u>100.00</u>

The areas below Albuquerque in Valencia and Socorro Counties are the regions within which the primary agricultural production of the MRGCD takes place. Class A acreages located within Sandoval and Bernalillo Counties are not insignificant, but their importance to the irrigation operations of the District must be appropriately recognized in much of the discussion which follows. To complete this overview of the current assessment structure utilized by the MRGCD, Tables E and F present the Class B properties' contribution to the financial maintenance of the District.

TABLE E
TOTAL APPRAISED VALUATION OF CLASS B
PROPERTY IN MRGCD

Year	Total Appraised Value	Private Ownership	Public Utilities
1972	\$182,495,000	\$ —	\$ —
1973	192,829,000	—	—
1974	202,335,000	—	—
1975	221,017,000	—	—
1976	236,918,000	—	—
1977	274,724,781	242,260,562	32,464,219
1978	259,137,776	223,669,716	35,468,060
1979	262,100,935	—	—

TABLE F
CLASS B ASSESSMENTS

Year	Millage Rate	Total Levy Assessment	Total Collected Assessments	Percentage Uncollected
1959	—	\$1,063,098.12	\$1,061,646.70	0.14
1960	—	926,051.71	923,050.50	0.32
1972	12.06	2,299,523.32	2,308,720.53	0.00
1973	12.80	2,438,577.09	2,443,073.80	0.00
1974	12.30	2,468,256.08	2,527,166.65	0.00
1975	9.18	2,245,389.26	2,002,090.72	10.84
1976	8.03	1,902,729.94	1,868,554.74	1.80
1977	7.10	1,950,545.97	1,641,887.29	15.82
1978	7.17	—	—	—
1979	10.03	—	—	—

Again, these figures provided substantial information regarding the contributions of the properties benefited by the river control works of the District and the patterns of property development within the District. However, substantive conclusions cannot be drawn. Table G presents the total contributions made to the Class B assessments by county and may provide some insight into the structure of the geographic property distribution and the nature of the primary beneficiaries of the flood and river control efforts undertaken by the District.

TABLE G
CLASS B TOTAL ASSESSMENTS BY COUNTY
1959-1977

County	Total Class B Assessments	Percentage of Total Class B Assessments
Sandoval	\$ 1,017,056.30	3.48
Bernalillo	24,601,413.14	84.14
Valencia	2,846,370.90	9.73
Socorro	774,094.75	2.65
	<u>\$29,238,935.09</u>	<u>100.00</u>

Although very definite patterns of development within the District (e.g., the decrease in the irrigation acreage of Bernalillo County) can be recognized, it is also clear that the District has not significantly changed in terms of the structure of beneficiaries since its inception (i.e., District irrigation and flood control groups of beneficiaries). The reduction in irrigated acreage reflects the increasing urbanization of the metropolitan area

around Albuquerque as do increasing trends in the total appraised value of property in the District. The subdivision of property within the District and the Albuquerque area has resulted in many small irrigators (less than five acres) deriving minimal irrigation benefits from the formerly more extensively irrigated lands which were subdivided. This is probably the strongest motivation for the 1979 change of the Class A beneficiary definition described.

To complete the picture of the District's current operations, Table H presents the summary of water use and irrigable acreage utilization for the District in 1978. The figures for irrigated acres presented in this table do not correspond to the figures presented in Table B, the disparity explained by the many small irrigation operations just described. Whether or not the new Class A definition will correct this discrepancy is not important as the figures in Table H more accurately reflect the actual patterns of irrigation and crop production within the District. The numerical description of the MRGCD operations will be left at this point although we will frequently use some of these figures in the narrative description of the District's development which will now be returned to. These figures provide useful insight into several of the legal and administrative issues which the MRGCD is currently addressing and which will affect the continuing evolution of this institution.

Current Issues—The MRGCD an Evolving Institution

The financial administration of the MRGCD is now really only a matter of mechanics and in recent years has not presented any fundamental constraints to the operations or security of the District itself. This is not to downplay the problems and/or headaches of the actual assessment process encountered by the District in meeting its financial needs but is to say that the District is now financially stable and properly managed fiscally. There have been several administrative policy changes in recent years and some substantial litigation which has had significant impact on the operations and administrative posture of the conservancy today. Several of these current issues are simply continuations of old disputes while others

TABLE H

1978 MRGCD WATER USER CENSUS

TOTAL IRRIGABLE ACREAGE	121,680 acres
Lands in Irrigation Rotation	
Harvested Cropland & Pasture	58,444
Cropland Not Harvested	421
Acres Irrigated	58,865
Fallow or Idle	13,962
Acres in Irrigation Rotation	72,827
Lands Not in Irrigation Rotation	
Idle, Fallow or Grazed	6,608
Farmsteads, Roads, Ditches, Drains	4,605
Area Not in Irrigation Rotation	11,213
Total Irrigable Area for Service	37,640
	<u>121,680</u>

Crops	Percent of Total Acreage
Barley	1.27
Corn	3.02
Oats	1.51
Rye	0.06
Sorghums	0.83
Wheat	1.33
Alfalfa Hay	59.21
Other Hay	6.18
Irrigated Pasture	16.66
Corn Fodder	1.48
Silage or Ensilage	5.85
Beans, Dry & Edible	0.08
Asparagus	0.02
Cabbage	0.04
Corn, Sweet	0.07
Lettuce	0.03
Melons	0.05
Watermelons	0.01
Onions	0.04
Potatoes	0.01
Squash	0.01
Tomatoes	0.03
Trees (Nursery)	0.03
Grass	0.18
Apples	0.45
Grapes	0.01
Peaches	0.01
Family Gardens & Orchards	0.87
	<u>99.34</u>

reflect more fundamental changes in the constituency of beneficiaries to which the district must respond. The following is not intended to

represent an exhaustive list of the concerns and problems of the conservancy today; rather, it is hoped that these disputes might serve as examples of sources of fundamental changes affecting the future of this water institution.

Water Rights and the MRGCD Today. The seemingly endless dispute over water faced by all cultures settling in the arid regions of the West is still one of the hottest issues in the current administration of the MRGCD. The District's water rights potentially are the most valuable of all the property entitlements to which the District can lay claim,⁹ and certainly any reduction or diminution of these water entitlements could be construed as threatening the stability and integrity of the District itself. Substantial litigation has been pursued by the District to protect their water right entitlements although the most definitive of these litigation potentials, the adjudication of all water right holdings in the middle Rio Grande, has never been advocated by the District.¹⁰

The most revealing, and potentially the most threatening, of the recent water right disputes which have involved the District is the litigation commonly referred to as the Cox case.¹¹ The case is the result of an attempt by William and Nancy Cox to sell their water right entitlement from within the District to a party outside of the District's boundaries. If these water rights were perfected private water rights *outside* the District, no problem would exist in the Cox's attempts to sell and transfer this water right entitlement under the laws of New Mexico. The fact, however, is that the water rights owned by the Coxes are located within the benefited area of the conservancy, and the District asserts that, without the benefits (i.e., reclamation and flood control) provided by the District's works, the water right entitlement in question would not exist.

On the other side of the litigation, the Coxes assert that the water right entitlement which they want to sell is what is known as a *vested* water right, that is, the specific entitlement existed prior to the District's formation and is, therefore, not subject to the District's control. On these grounds the Coxes filed application for change with the State Engineer's Office (SEO), according to New Mexican law, in 1975. The application for change was not contested by the District on the

basis that transfer will impair the District's water rights, but rather on the ground that this water right is now subject to the jurisdiction of the MRGCD solely and that the asserted jurisdiction of the SEO is incorrect. In essence, the MRGCD's argument is that the water right would be moved outside the District and that, due to the benefits provided by the District's works, this water right transfer is subject to the approval by, and jurisdiction of, *only* the MRGCD in conformance with and as provided by state law.

The ramifications of this dispute go far beyond the limits of the case itself and could lead to the significant alteration of claimed water right entitlements possessed by the District. The District's need to assert authority over this transfer stems fundamentally from a felt need to resist pressure from the nonagricultural water users who wish to purchase water rights and transfer these water rights outside the District. Permit No. 0620 (see Table A) states that nearly 81,000 acres of irrigable agricultural land with perfected water rights existed in the valley at the time the District was organized and that the claimed vested rights of the Cox lands are a part of the 81,000 acres. If the Cox transfer application were to be allowed by the Courts, the remainder of these perfected rights could, potentially, also be transferred outside of the District's benefited area. The impact of such a precedent is obvious.

The case began with the State Engineer in 1975 and is still before the State District Court awaiting trial on its merits. In the meantime, numerous procedural matters requiring at least one interlocutory appeal to the Appellate Court have been raised by both governmental agencies involved. As of this writing more than four years after the filing of the initial application, the case still languishes in State District Court with a number of procedural matters still pending before it can proceed to a hearing on the merits. Even after resolution on the merits in District Court, the case assuredly will be appealed for final resolution by the State Supreme Court.

A litigation strategy which has been very useful in similar disputes is well evidenced by the Cox case. This might most simply be described as a stalling tactic which has served to make the disputed transfer so expensive (e.g., transaction

costs) as to require its continued pursuit to be more a matter of *principle* than a litigation of a specific transfer. Water right entitlements are indeed the basis for all the powers and authority of the MRGCD. Any attempts to challenge or diminish these rights are likely to meet with the same response by the District; there is nothing more fundamentally important to the continuation of the MRGCD than the protection of their water right entitlements.

The water right entitlements of the MRGCD have been described adequately, but no qualification of these rights has been provided which describes the ability of the District to transfer or lease these rights. Several authors have examined the increasing scarcity of western water resources, and all have generally concluded that, for the West to continue its development, some socially efficient mechanism must be allowed to reallocate the available water resources to new and/or higher valued uses of these resources.¹² There has been extensive discussion of how, with the increasingly scarce nature of the water commodity, this reallocation can be accomplished through the mechanisms of market economics whereby water tends to migrate to its highest valued user. An alternative to this market mechanism has been the suggestion that water be reallocated according to principles and proclamations assumedly established by each state of those uses which are to be considered "more beneficial."¹³ Regardless of the mechanism, the conclusions remain that the water resources of the West are becoming scarce, that demands being placed on available water are increasing, and that some mechanism will be required to make better use (e.g., more efficient) of the water resources which have provided for the development of the arid and semiarid regions in the past.

In recognition of this future constraint on the utilization of the District's water entitlements, there has been some discussion of the potential for leasing the water rights of the District to other uses outside of the District's boundaries. It must also be recognized that such a proposal is contrary to the position taken by the District in the Cox case, but the discussion of the potential is also illustrative of the nature of the District's water right entitlements.

A fundamental distinction can be drawn between two wholly separate types of water right entitlements which are possessed by the District. The majority of the District's water rights are governed under state law and have been acquired through the procedures promulgated by the SEO. All of the 80,785 acres considered to be vested or perfected irrigation rights existing prior to the District's formation, as well as the additional 42,482 acres granted at the time of the formation (see Permit Number 0620, Table A), are subject to jurisdictional control by the SEO. The water rights belonging to the Pueblo Indians and the water entitlements provided by the San Juan-Chama contract are subject to the federal limitation on their use and transfer. This distinction is somewhat artificial, however, as the assignment of the District's debt obligation to the Bureau made all property of the District subject to the Bureau's "real property lien." Under the laws of New Mexico a water right is treated as a form of real property.

The question of leasing the District's water right entitlements must be discussed in light of two somewhat different legal doctrines¹⁴ as the jurisdiction of either the state or federal authorities is still indeterminate as indicated in the Cox case. The federal law, primarily provisions of the Reclamation Act of 1902, concerning the transferability of water right entitlements supplied from federally supported projects is ill-defined. These laws provide much detail regarding the formation and requirements imposed by water supply contracts, but there is no mention of the transferability of these water entitlements.

Fortunately, the contract drawn between the Bureau of Reclamation and the MRGCD in 1951 for rehabilitation and construction provided specific provisions for the transfer of water rights:

The District may . . . contract for the disposal of a part of the project water supply for any use not detrimental to the primary uses herein specified.

This contractual provision, when coupled with state statute, provides for the District's ability to transfer its water entitlements to other uses. Clearly, the provisions of this contract would indicate that the leasing of the District's water entitlements has been provided for, but, unfor-

tunately, there are several other provisions which might complicate the strict interpretation of the leasing's consideration in the above.

The decision provided by the United States Supreme Court in the case *California v. United States*, [46 U.S.L.W. 4997 (July 3, 1978)] provided some credence to state control of the proper utilization of the MRGCD water rights. In light of the decision in this case, it may now be argued that leasing federal water by the District is now longer a matter which can be left to the exclusive control of the Bureau of Reclamation. It now may also be arguable that the distinction between "federal" and "state" water no longer exists and that any leasing of federal waters are subject to the same control as the leasing of state waters described in the following.

The argument against the MRGCD's power to lease its waters to persons outside the District begins with the notion that nowhere in the Conservancy Act is such an express authority given to the Board (see N.M. Stat. Ann. § 73-14-1 et seq.). Furthermore, it can be pointed out that the statute specifically requires:

No sale, lease, assignment . . . shall be made or granted which shall infringe upon or interfere with the water rights of lands in the District . . . [N.M. Stat. Ann. § 73-14-47 (1978)]

and,

In time of droughts, it is essential that the districts have the specific and bequested power to distribute the water remaining available for irrigation and to properly allocate the same for the purposes most essential for the welfare and economy of the land-owners within the district. [N.M. Stat. Ann. § 73-14-49 (1978).]

To the extent that the leasing of water by the District to those outside the District might, in time of shortage, "infringe or interfere with the water rights of lands in the district," it can certainly be argued that the lease would violate both of the above provisions.

Although the issues are different in the leasing discussion and in the previously discussed Cox case, the leasing of water by the MRGCD raises the same specter of conflicting state agency jurisdiction which is presented in the Cox dispute. The jurisdictional dispute in Cox arose when the

Coxes applied to the State Engineer for a water right transfer of MRGCD water and the District interposed its objections to the assertion of the State Engineer's jurisdiction, arguing its authority to control such a transfer.

The resolution of the Cox dispute in favor of the State Engineer's jurisdiction would certainly provide for the authority of the District to lease its water entitlements. Unfortunately, this is not the decision which is being sought by the District. There is a strategy which could be employed by the District to achieve favorable resolution of this jurisdiction dispute and still allow for the leasing of the District's water rights. If the District is able to successfully delay the proceedings in the Cox case until such a time that the Coxes decide that the most sensible action is to drop the suit for financial or personal reasons, then the way has been cleared for the District to more actively pursue the leasing of its entitlements. It can be expected that the leasing of the District's entitlements outside of the District would require some resolution of the State Engineer's jurisdiction, but a resolution of this dispute might be more easily arrived at if such a decision were in the interest of the District—rather than a threat as in the Cox case.

In the absence of a resolution providing for the leasing of the District's water right entitlements and with the strict constraints placed on all entitlements in the middle valley region of the Rio Grande as a result of the Compact obligations, the utilization of the available water supplies can be expected to become increasingly critical to further development of the middle valley region. As has been indicated, it would seem that the District has been provided permits to appropriate and store sufficient water for its needs. Moreover, during recent years the District's debt obligation to Texas has been finally eliminated through: 1) the careful administration of the water available, 2) the temporary transfer of Albuquerque's San Juan-Chama water project entitlements for the past several years, and 3) results of favorable flows on the river in recent years. The important question that will inevitably confront the District in the very near future concerns the actual quantification of water that is being "beneficially used" by the irrigators of the

District. The permits presented in Table A represent the recognition of water right entitlements for the irrigation of 131,615 acres, plus an additional entitlement to 20,200 acre-feet of water under the San Juan-Chama project.

On the other side of the coin, the figures provided by Table B indicate a declining trend in the irrigated acreage of the District, and the recent reclassification of property within the District suggests that only two-thirds of the acreage permitted for irrigation are actually so utilized at this time. An adjudication of water right entitlements in the middle valley would certainly consider this reduced area; a reduction of as much as one-third of the District's water right entitlements could reasonably be discussed. It is also possible under state law that the District could lose its water right entitlements through other methods such as abandonment or adverse possession for nonuse, but both of these revocations of water rights would certainly meet with substantial resistance by the District. The condemnation of water rights is possible. However, in this particular case, it is more likely that an adjudication hearing would be a more efficient way to acquire water entitlements from the District by anyone wishing to do so.

The current administration of the District is aware of such a potential suit, and it can be assumed that this is a source of interest in leasing the District's water entitlements. There have been other instances, most notably in the metropolitan Denver area, where similar urban development has resulted in significant decreases in irrigable areas in other regions of the west and cases in which the water entitlements of a water institution (e.g., conservancy) have been reassigned to other beneficial uses such as municipal use. The significance of these entitlements' assignment to the District has been recognized. The pertinent issue is then whether the District will be successful in finding sufficient applications through which it can make beneficial use of all these valuable resource entitlements—this concern possibly providing the most critical of all the issues which must be faced by the MRGCD in the future.

The State of Flood Control in the MRGCD. The management of the MRGCD as a water institution, and in particular as a flood control

agency, has been of principle concern since the District's formation in 1925. Unfortunately, the battle which is being fought by this institution is actually a battle with the forces of nature. In the years since the District's formation, flood control works, dams, levies, and river channelization have not stopped the processes of river aggradation. Today a trip to the valley provides an ominous image of the future: the levees which limit the river's channel have also limited the width of the alluvial deposits' development, with the bed of the river now visibly above the surrounding valley lands. Nature has been controlled, not beaten.

Concern over the potential for severe flooding of the valley lands has continued. In early 1979, the Army Corps of Engineers presented for public comment a new flood control study designed to increase protection to the urban area from Bernalillo to Belen. These plans contemplate increased levee protection for all included areas, with the maximum protection proposed (i.e., to control flood flows described as occurring once every 700 years) costing an estimated \$48 million. State and local contributions would be nearly \$12 million under the water policy promulgated recently by the President and the National Water Policy Commission. The MRGCD has been suggested as the logical sponsor for such a program although there was not strong sentiment supportive of the maximum protection plans provided at these cost estimates. Regardless of the actual program which is initiated, it is apparent that some additional flood protection program is required to protect the increasing property values of the middle valley. However, all of these projects are beyond the financial capabilities of the MRGCD or any other single entity existing in the valley at this time.

Akin to these flood control proposals is a dispute over the actual benefits which are received by property holders of the middle valley as these benefits relate to the tax assessments paid by the beneficiaries. Currently, operation and maintenance assessments are based on an administratively established division of 25 percent contribution by the Class A properties and a 75 percent contribution by the Class B properties. It is reasonable to ask whether this proportion also represents the actual benefits received by these

properties and/or whether this proportion reflects the actual costs of the District's operations and maintenance for each of the two classes of beneficiaries. No definitive answer is easily arrived at in this matter, and any such attempt could be challenged based on the general nature of benefits which have resulted from the District's programs (i.e., regardless of the annual contribution provided by any individual Class B property and as long as it continues undamaged by flooding, the fact that this property exists at all is a result of the drainage and river control works of the District).

To raise this question, without the ability to answer it definitively, provides for much insight into the current operations of the District. The beneficiaries of the MRGCD have no ability at this time to either directly or indirectly evaluate whether the benefits which they actually receive are in proportion to the contributions which they make—a situation from which significant dispute could spring and grounds upon which the administrative operations of the District could be severely criticized. Indeed, the financial operations of the District are complex but not so much so that the District's political/fiscal responsibility could not include an assessment of whether or not its financial structure is disproportionately benefiting a particular group of beneficiaries. No indictment of the conservancy is intended by this comment, but rather a simple recognition that an administrative failing in this regard could lead to poor relationships between the individual beneficiaries of the District and its administration. The historical evidence is clear as to the problems such circumstances can provide to the operations of the District.

Fencing and the MRGCD as a Public Institution. The clear pattern of increasing urbanization of the MRGCD jurisdiction has already been described. There is no better single example of how this changing environment can affect the concerns of the Conservancy District than is presented in the dispute over the fencing of the District's irrigation and drainage ditches in the Albuquerque area. There have been numerous complaints voiced regarding the dangers presented by open ditches in an area populated by many families, most of whom are not involved in any

way with the irrigation operations of the District. In June of 1972 a class action suit was filed against the MRGCD.¹⁵ Ellis Armstrong (Commissioner of Reclamation for the Bureau of Reclamation) and others requested injunctive relief to abate a nuisance caused by the existence of unfenced irrigation ditches in the District. The suit was originally brought in the State District Court but was remanded to Federal District Court by Defendant Armstrong pursuant to the Federal Code.

Once in Federal Court, Defendant Armstrong moved for dismissal, contending that the suit was in reality a suit against the United States to which it did not consent and, as such, should be dismissed pursuant to the doctrine of sovereign immunity. The Court, in January of 1973, dismissed the action and sent the case back to State District Court. Once back in State Court, the remaining defendants made a motion to dismiss the case on, among other grounds, the failure to join an indispensable party, i.e., the United States. Finally, in 1974, the Court concluded that the United States was an indispensable party, reasoning that the United States, as title holder of the District land, might have to pay for any fencing, and even if the contract were construed so that it did not have an obligation to pay for any fencing, the repayment of its loans to the District might be in jeopardy because of the increased financial burden placed on the District. The Court held that this action could not proceed any further without the presence of the United States as a party, and, since the Federal District Court had already held that the U.S. was immune through sovereign immunity, dismissed the action.

This decision was later affirmed by the New Mexico Supreme Court in 1975 in an order entered without opinion. Again the power of the "indispensability" of the United States in such action was demonstrated and handled with a great deal of administrative finesse, but "... the public safety, health, convenience and welfare" (quoted from the Court order establishing the District in 1925) which was to be promoted by the organization of the conservancy were certainly ignored by the Court's and the District's actions in this matter.

After several years of continuing effort and negotiations between the City of Albuquerque and the MRGCD and after 92 individuals (50 percent children under age 7) had drowned in the ditches of the Conservancy in the previous 20 years, the City decided it was time to erect the fences *without* the permission of the District in March of 1979. The District's reaction to this work certainly surprised both the City and those who were to benefit from these fences. The District threatened to bulldoze the fences if the City did not cease their construction, with relations between the Mayor and the District at a confrontation. Subsequently City and District Attorneys worked out a plan whereby fences could be constructed on an "experimental" basis, with funds provided by city, state, and federal levels—but with no financial support for the fences provided by the District.

Apart from the central concern about loss of life, the issue which is of greatest concern in this dispute is the nature of the District's recognition of the "public interest" role which it has been repeatedly remanded to recognize by previous Court rulings. The Conservancy District is a public agency designed to improve the lands of the middle valley for the purposes of settling and developing this area. There is then both implicit and explicit in all the actions and decisions faced by the District in the responsibility to a single concern—the public interest of its constituency. The District's legal shelter from litigation as a result of the "indispensability" of the United States, and the sovereign immunity of this indispensable party, has provided the District with the ability to shun the public interest role, essentially at its convenience. The previous example illustrates this point.

The Continuing Evolution of the MRGCD

There have been several changes and modifications to the MRGCD's operations since the early 1960s. The majority of these changes have had only limited impact on the functioning of the institution; however, several should be noted. Probably the most influential of all these changes has been the change from an appointed Board of Directors to an elected Board in the early 1970s, this the result of litigation challenging the consti-

tutionality of the appointment of these Directors by the Judges of the Second Judicial District.

The plaintiffs filed a class action suit¹⁶ against the MRGCD, its Board of Directors, and the Judges of the Second Judicial District in New Mexico, alleging that N.M.S.A. § 75-28-11 (1953), which provided for the appointment of the Board of Directors of the conservancy by the Judges of the Second Judicial District, was unconstitutional. The gist of the plaintiff's argument was that the Constitution of the United States requires that persons residing within the District be given the right to elect the Board of Directors of that District on a one-man, one-vote basis.

The defendants filed the usual motion for dismissal, claiming that the United States was an indispensable party to the dispute. In this instance, with no request for a money judgment or any other financial ramifications in the case, the Court, on October 12, 1973, denied the motion.

Shortly after the Court's decision during the 1974 legislative session, the New Mexico Legislature proposed a Constitutional amendment mandating that any political subdivision with taxing authority, including the MRGCD, have an elected governing authority. Because of the obvious effect of this Constitutional amendment on the suit, the Court, on March 29, 1974, stayed the proceedings pending the outcome of the referendum on the proposed amendment.

On November 5, 1974, the Constitutional amendment passed and was codified as N.M. Const. Art. VIII, § 9. The amendment precluded a "tax or assessment of any kind" by a "political subdivision when enabling legislation did not provide for an elected governing authority." The effect, of course, was to require legislation which would mandate an elected Board for the MRGCD.

The 1975 Legislature responded with a compromise statute which for all practical purposes mooted the Constitutional Court challenge. The new law, Laws of N.M. 1975, Ch. 262, mandated an elected Board of seven members. Each Board member was required to be a qualified elector of the District and a resident of the District and county from which elected. A "qualified elector" was defined as a "natural person who owns real property within the . . . district."¹⁷ Furthermore the statute operates to require that three of the

Board members be from Bernalillo County and that one Board member be selected from each of the other three counties of the District. The seventh seat on the Board is elected at large, thereby making a four-person majority from Bernalillo County likely.¹⁸

The results of this action are probably more telling about the nature of beneficiaries than any other change made in the District. The most recently elected Board is composed entirely of individuals who are either currently irrigating property or are closely tied to the concerns and interests of the irrigation community.¹⁹ Clearly the most politically organized of the various diverse beneficiaries of the District are those in the irrigation community; apparently, the Class B beneficiaries are composed of such small factions as to make their influence in the operations of the District of only limited success. The former control of the District's operations by the financially and politically powerful nonagricultural sector has seemingly given way to the more politically unified concerns of the agricultural community.

Clearly, the management of the District will continue to promote expansion of the flood control facilities although these needs can be expected to be increasingly left to the administration provided by the Corps of Engineers. The unanswered administrative question of the future then must be asserted regarding the role which will be pursued by the District in its other primary goal, the continuation and possible further development of the irrigation community in the middle valley region. The control of the District's Board by the agricultural interests would suggest that these individuals might extensively pursue the development and improvement of the District's irrigation facilities. But to use the description provided by the District's current General Manager, Mr. Robert S. Nanninga, the Board is "... composed of a group of hardheaded farmers who each wish to accomplish any task in *their way*" [emphasis added]. This makes the development of any single goal or policy much more difficult than it might otherwise be.

It appears that the relationship between the District and the Bureau of Reclamation is still very strong although this may also be changing in light of the recent (November 6, 1979) name

change of the Bureau of Reclamation to the Water and Power Resources Service. It should also be noted that the use of the former name throughout this description of the MRGCD was done with the intention of describing the former role of the agency, and the recent name change might very well signify a substantially different purpose(s) for this federal agency which has served for nearly three-quarters of a century to promote the development of irrigation throughout the West.

There is no reason to believe that the "indispensability" shelter will not continue to be used by the District as the repayment of the debt obligation to the United States is not likely to end soon. Furthermore, with the expansion of the flood control facilities as has been described, it can be expected that the current debt obligation could be expanded. Historically, there can be little doubt that the District *required* the assistance of the federal government to accomplish its original tasks, but the role which will be played by the feds in the future is at this time somewhat indeterminate. However, it can reasonably be asserted that the District and its beneficiaries will at least wish to continue the current relationship with the Water and Power Resources Service.

Of the many plans and policies which the District is currently considering, there are two which would lead to significant alteration, and possibly evolutionary change, in the operations of the District and its role as a water institution. There has been recognition that the delivery works of the District are not as "efficient" as might be desired in accomplishing the irrigation of the conservancy. There have been suggestions of "super canals" which would provide for substantially improved access to water for delivery and for maintenance of better delivery schedules, but some concern has been expressed that these large canals would not provide sufficient benefits or delivery improvements to justify the expense of their construction. A financially more reasonable program which is currently being discussed is extensive concrete lining of the existing laterals and ditches.

It is thought that this lining might accomplish several purposes which have not been adequately considered by the District prior to this time. The

dirt ditches and laterals as they exist today are very inefficient, in that the filling of a particular ditch with water for irrigation may require as much as several days because of the infiltration and percolation of these waters into the ditch-bank itself. A concrete lined ditch would thereby provide delivery of irrigation water on much more of a demand basis, allow more accurate estimation or measurement of the water actually applied to irrigation, and significantly reduce the usable water now lost in irrigation of crops. The most attractive feature of this plan is its lower cost: it would require the purchase of a single machine, currently valued at approximately \$500,000, which would be capable of lining the existing ditches and laterals. Again, this is only speculation at this time; it would be premature to describe these as probable actions which will be pursued by the District.

The other major administrative change being considered which could influence the future role of the MRGCD in the middle valley is the previously discussed potential for leasing the District's water right entitlements. As has been indicated, there are substantial obstacles which stand in the way of this leasing potential. However, the common condition of water's increasing scarcity throughout the region may force the District to pursue this potential soon: there is no more threatening potentiality to be faced by the District in the future than the condemnation of their water right entitlements as a result of not having placed these entitlements to beneficial use as required by law. It should be noted that the potential for such condemnation is distant at this time and that any action on this possibility is unlikely until the Cox jurisdictional dispute is resolved.

The pattern is clear and should not be ignored: as the water resources of the region become increasingly scarce and as there is increasing competition for the rights which are available, the institution which controls the majority of the water entitlements in the middle valley will be increasingly pressured to make better and more efficient use of these resources. The definition of how "better" or "more efficient" use can be promoted will not be speculated upon as these are decisions which must be made directly by the

society served by this vital resource. The possibilities are simply too great to ignore in the consideration of the evolution of this water institution, and the recognition of this future constraint by the District's Board would serve to set the stage for the implementation of programs as required in the future.

With this recognition of the MRGCD as a water institution, there must also be renewed recognition of the political nature of the institution as well. The reactions of the District, although sometimes seeming somewhat arbitrary (e.g., resistance to fencing), must now be recognized as actions of a politically elected Board that is forced to consider the interests of many diverse beneficiaries. It has been suggested that the best description of the Board's action, and of the District in general, is a "go slow" policy. Certainly, this description must be assigned some accuracy in light of the minimal evolutionary change that can be observed in the District since its formation in 1925. Indeed, when consideration is given to the substantial change in the demographic makeup of the District since its inception, the absence of any more fundamental changes in policy and purpose than have occurred in more than half a century is striking. Other than in the financial operations of the District, there has been little outward recognition of changing aspects of the District's functions. As a result, it may usefully be suggested that the District consider a reevaluation or restatement of its political and social purposes if for clarification's sake alone.

Summary

The development of the MRGCD as an organization charged with protecting property from flooding, managing and supervising the river, and maintaining a system for irrigation in the middle Rio Grande valley has been presented. This narrative is filled with descriptions of developmental processes which illustrate the evolution of an institution's capabilities and powers. It must be recognized that central to the past and continuing evolution of this institution is its role in the distribution of the water resources assigned to it. To present the MRGCD as a "water institution" allows much insight into the role it has played and will continue to play in the development and

improvement of the middle valley region of the Rio Grande.

But with the development of this analytical stance, it must also be recognized that the MRGCD was organized, formed, and is now run by *individuals*. These individuals are responsible for much of the current state of affairs and policy strategies to which the MRGCD responds. The MRGCD's description as a "water institution" can quickly degenerate into discussions of politics, favoritism, and personalities to which these individuals are subject. In functioning as an institution, these individuals are forced to consider many competing and conflicting social values and weigh the merits of each of these values against the central purposes of the institution.

The cultural heritage of the inhabitants of the middle valley has played a large role in the development of the MRGCD although these cultural values are seemingly of lesser importance as the water resources controlled by the District become increasingly valuable in uses competing with the water's agricultural appropriation. The behavior of this water institution in finding a balance between its former purposes and these new competing purposes (e.g., leasing of water entitlements) which will also allow for the continuation of rural values in an increasingly urban area is indeed the challenge for the future which must be addressed by all parties benefiting from services provided by the MRGCD.

The historical perspective provided in this article in some sense describes the starting point for an administrative and institutional structure which must now adapt to changing social values and conditions within the context of the MRGCD's original purposes. The water resources which are controlled by the MRGCD are critical to the continuation of development within the middle valley region. The structure and organization of the District provides for some inborn adaptability to changing social circumstances, but it is also clear that the thrust of the evolution of the MRGCD will come directly from the individuals of the community which it serves. The perceptions of this constituency regarding the necessary social services are those which shall be the present and future tasks of the conservancy's management.

FOOTNOTES

1. N.M. Stat. Ann. § 75-28-1 *et seq.* (Repl. 1968, Supp. 1975). The bulk of the historic information drawn upon throughout this description of the MRGCD was obtained by research in the Second Judicial District Court's file number 14157. This file has served as the collective file on the MRGCD since its formation, and citations of documents obtained through this file when presented in this description will be presented with their sub-numbers only (when these are available). Funding for this research was provided for by the New Mexico Water Resources Research Institute.
2. *Protest*—filed in District Court prior to 1924.
3. *Order Declaring the Organization of the Middle Rio Grande Conservancy District, Adjudicating All Questions of Jurisdiction and Findings on Hearing*; filed August 26, 1925.
4. "A Brief Economic Survey of the Middle Rio Grande Valley," (by authority of the Rio Grande Association) August, 1923.
5. Order Approving Plan With Modifications, subnumber 184, filed August 15, 1928.
6. Opinion of the Court on Removal Proceedings, subnumber 287, filed June 20, 1930.
7. The assignment of water right priorities throughout the west is generally based on the notion of "first in time, first in right," but there have been several priority assignments based on the notion that the reservation of land by the federal government also assigned water rights to that land for the purposes of its set aside. This is most generally known as the Reserved Rights Doctrine by which the water right entitlements are assigned priority dates based on the date that the lands were set aside. The description provided here of the prior appropriation doctrine and water rights in the state of New Mexico is extremely abbreviated. For further information regarding the specifics of the doctrine or New Mexican Water Law see Wells Hutchins, *Water Rights Law in the Nineteen Western States*, 3 Vols., Washington, D.C., U.S. Government Printing Office, 1971.
8. These and all the other figures presented in this section were taken from the 1978 Annual Report of the District, with the information for the past two years the result of interviews with various personnel of the District. These figures show Total Collected Assessments as of August 31, 1978, and are no longer precisely the same as these figures are restated in every Annual Report as the outstanding debt obligations are collected. Those years in which the District collected more than it levied in assessments represents the interest penalty paid by delinquent property owners.

9. For an explanation of how water rights can be assigned monetary value under the doctrine of prior appropriation, see Rahman Khoshakhlagh, F. Lee Brown and Charles T. DuMars, *Forecasting Future Market Values of Water Rights in New Mexico*, Las Cruces, New Mexico: Water Resources Research Institute, 1977.
10. The District's water right entitlements are of a nature that the adjudication of these rights, although certainly more precisely defining the quality of these entitlements, could potentially significantly reduce these rights from the maximum quantification as was presented in Table A. Such a reduction potential is certainly the reason why these adjudication proceedings have not been pursued by the District in the past even though the strategy of indefinitely delaying these adjudication hearings might be considered inappropriate given the circumstances of the decreasing irrigated acreage. There should also be recognition that the simplicity of the description of "an adjudication hearing" is misleading in that this is an extremely complicated and difficult proceeding which could lead to some substantial additional litigation in the Middle Rio Grande Valley.
11. *Middle Rio Grande Conservancy District v. Cox*, N.M. 13th Judicial District Court, filed.
12. Of these studies the most interesting are those which describe the potential for the market allocation of the available water resources. Several approaches to these market allocations are possible, and the prior appropriation doctrines of most states have provision for the transfer of water rights between users and differing uses. Of particular note are investigations of "Water Banking," see Sotirios Angelides and Eugene Bardach, *Water Banking: How to Stop Wasting Agricultural Water*, San Francisco: Institute for Contemporary Studies, 1978; and research to be completed this spring by Dr. Jay Bagley of the Utah Water Research Laboratory (Logan, Utah) which discusses the potential for implementing such a concept in that state. There has been provided an in depth evaluation of how the market mechanism can become increasingly sophisticated as the water resources become increasingly scarce, see John Tysseling, "Western Water Market Sophistication" (unpublished Master's Thesis, University of New Mexico, Albuquerque, New Mexico, 1979); research which was conducted under a National Science Foundation Grant and which will be published in an expanded form in early 1980.
13. See Utah Code Annotated § 73-3-8 (Repl. 1968).
14. The following discussion of the potential for the leasing of water by the MRGCD is in no way complete or definitive. This issue is possibly the most complex legal question currently faced by the MRGCD, and any conclusions as to the likely outcome of litigation in this matter, whether implied or expressed herein, should be considered to be conjecture. A more thorough examination of this question is provided in the formal report of this research project to be published by New Mexico Water Resource Research Institute later this year. The reader is referred to this document for any further information on this leasing potential.
15. *Escamilla v. Middle Rio Grande Conservancy District*, Civ. No. 9547, D.N.M. (1972).
16. *Eschmilla v. Middle Rio Grande Conservancy District*, Civil Action No. 9547, D.N.M. (1972).
17. N.M. Stat. Ann. § 73-14-20 (1978).
18. N.M. Stat. Ann. § 73-14-22 (1978).
19. This relationship between the nonirrigating Board members and the agricultural community was described by Mr. Robert S. Nanninga, General Manager of the MRGCD, in an interview conducted November 29, 1979.

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Current Economic Developments in New Mexico

MONTHLY SUMMARY

ILENE KELFER-LODDE

The national economy has weakened significantly in recent months, causing analysts to focus on the severity of the coming recession. While there is little concrete data at this time indicating that the national economy is in recession, several key indicators show that it has clearly moved in that direction. For example:

- 1) The Department of Commerce Leading Economic Indicator, which is a composite list of twelve foreshadowing indicators, declined by 2.6 percent for the sixth consecutive month.
- 2) Industrial production fell for the second consecutive month by 0.8 percent, representing the sharpest decline since the nationwide trucking strike in April, 1979.
- 3) The unemployment rate in March rose to 7 percent of the labor force.

The current weakness in the national economy has been felt most in the construction and retail sales sectors. Most recent figures indicate that U.S. construction contracts were down 20 percent during the first quarter of the year compared to the same period in 1979. Housing starts in the nation declined by about one-half million from December, 1979 to March of this year. Starts in March measured only 1.04 million, the lowest since April, 1975, and 40 percent below year-earlier figures.

The state aggregate economic indicators show a 4.1 percent (SA) increase in the total civilian labor force in New Mexico in February. Total

nonagricultural employment has been keeping up with 1970 growth levels, expanding by 4.6 percent (SA) in February compared to levels a year earlier. However, with 39,000 persons unemployed, February's unemployment rate rose to 7.0 percent (SA).

Economic slowdowns at the national level has made itself felt in the New Mexico economy, particularly in the construction sector. Although interest rates have stopped moving upward, construction activity in the state has declined significantly in recent months. Residential construction has been most affected, with residential construction contracts in February, 1980 declining by 27.9 percent compared to year-earlier levels. Three consecutive months of decline in residential building permit activity indicate that a slowdown will continue into the future. Nonbuilding construction contracts (i.e., bridges, highways and other public works) also declined for the third consecutive month in February. Only commercial construction activity appeared more optimistic in February, showing 129.4 percent growth over year-earlier levels. However, any optimism should be tempered with caution because behavior of nonresidential construction activity for the last six months has been extremely erratic.

Trade and manufacturing activity in New Mexico in February also showed signs of weakening. Growth of retail trade employment has fallen because of declining growth of income in New Mexico. Jobs in retail trade grew by only 2.6 percent (SA) over February, 1979, compared to 3

percent growth (SA) in January. Both of these figures were weak compared to nearly 6.0 percent average growth demonstrated in this sector in 1979. Wholesale trade employment grew by 5.8 percent in February although growth of total trade hours worked in February was flat. The manufacturing sector is generally among the first to be affected by recession. However, only the number of hours worked in manufacturing appears to have been affected in New Mexico. The number of manufacturing jobs grew by 6.1 percent (SA) in February compared to a year earlier, yet the number of hours worked grew by only 2 percent (SA). This compared with 3.6 percent (SA) growth of hours in January, 1980.

Looking at other sector activity, TCU employment has been growing at a declining rate this year, measuring 3.3 percent over last February's figures. Tourism-related activity has also weakened. For example, lodging employment has declined by more than 3 percent during each of the last three months. Monthly visits to national parks have been mixed this year but declined by 12.1 percent in February compared to year-earlier levels.

In the financial sector, new time deposits at savings and loan associations increased by 58.1 percent in February, following 35.9 percent growth in January. Savings and loan savings capi-

tal increased by 11.5 percent for the second consecutive month. Banking activity was generally strong, with demand deposits and time deposits increasing by 1.5 and 11.1 percent, respectively, compared to year-earlier levels. New bank loans were down by 11.5 percent.

Generally, services and mining have shown the greatest strengths in 1980. Compared to a weak 1979, employment in services in the first two months of this year increased at rates reminiscent of its 1978 growth patterns, averaging 5.6 percent. Mining continues to be the mainstay of the state economy. Petroleum production in February was up by 2 percent; natural gas, by 2.2 percent (SA). Following 25.8 percent growth in January, coal production rose by 26.3 percent in February compared to year-earlier levels.

The outlook for the New Mexico economy remains uncertain and depends upon the severity of the national recession. However, clearly, the state economy can expect continued slowed growth in the immediate future. Sectors most affected by the national recession will be trade—particularly retail trade—manufacturing, construction, and tourism-related activity. However, services appears to be relatively strong at this time, and the mining sector promises to support the state economy with its continued healthy expansion.

ECONOMIC INDICATORS

	Quarterly Averages			
	1979			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
1. GENERAL				
Civilian Labor Force ¹ (000)	519.6	536.3	545.3	546.9
Seasonally Adjusted*	533.8	533.6	536.1	545.0
Total Employment ¹ (000)	484.5	501.1	510.9	511.5
Seasonally Adjusted*	500.2	498.3	500.9	509.0
Unemployment ¹ (000)	35.1	35.1	34.4	35.4
Seasonally Adjusted*	33.6	35.3	35.2	36.0
Unemployment Rate (%)	6.8	6.5	6.3	6.5
Seasonally Adjusted*	6.3	6.6	6.6	6.6
Weekly New Unemployment Insurance Claims	1,436.0	1,171.7	1,114.0	1,362.7
Seasonally Adjusted*	1,252.8	1,283.0	1,220.3	1,318.7
Nonagricultural Wage/Salary Employment ² (000)	446.7	461.7	467.0	470.6
Seasonally Adjusted*	455.2	459.1	462.0	469.6
New Business Incorporations	237.7	240.7	243.3	298.0
Business Failure Liabilities (000)	58.0	0.0	0.0	na
2. AGRICULTURAL RECEIPTS				
From Livestock and Products (\$ mil.)	46.6	48.4	49.1	136.4
Seasonally Adjusted*	67.0	66.8	75.3	66.4
From Crops (\$ mil.)	12.7	10.6	17.0	40.2
Seasonally Adjusted*	18.1	16.9	19.1	22.4
3. MINING PRODUCTION				
Petroleum (000 bbls.)	6,454.2	6,578.6	6,663.3	6,763.7
Natural Gas (bil. cu. ft.)	95.7	95.4	94.7	99.5
Seasonally Adjusted*	94.5	96.3	97.4	97.3
Copper Ore (000 tons)	13.8	16.6	15.8	15.0
Coal Production (000 short tons)	1,038.3	978.3	944.0	1,023.0
4. CONSTRUCTION				
Residential Building Permits (\$ mil.)	24.8	30.1	25.7	13.7
Seasonally Adjusted*	23.6	26.5	25.8	16.7
Residential Construction Contracts (\$ mil.)	42.4	48.8	40.5	37.1
Seasonally Adjusted*	43.0	44.5	39.0	40.7
Nonresidential Construction Contracts (\$ mil.)	16.2	26.0	28.5	35.1
Nonbuilding Construction Contracts (\$ mil.)	16.7	15.3	26.3	16.6
5. MANUFACTURING				
Employment ² (000)	33.6	34.7	35.0	35.5
Seasonally Adjusted*	34.3	34.8	34.6	35.0
Average Weekly Hours	39.4	39.5	39.3	40.0
Seasonally Adjusted*	39.4	39.7	39.6	39.6

ECONOMIC INDICATORS (continued)

1979 December	1980		Percentage Change				Percentage Change		
	January	February	I 1978- I 1979	II 1978- II 1979	III 1978- III 1979	IV 1978- IV 1979	Dec. 78- Dec. 79	Jan. 79- Jan. 80	Feb. 79- Feb. 80
544.7	541.4	540.5	3.0	1.7	1.2	2.5	2.3	4.8	4.1
547.6	559.0	555.4	3.0	1.8	1.2	2.5	2.3	4.7	4.1
508.5	495.5	499.4	2.4	0.6	0.3	1.6	1.4	3.1	3.2
511.1	515.1	516.4	2.4	0.6	0.2	1.7	1.4	3.1	3.2
36.2	45.9	41.1	12.4	20.6	17.7	16.6	16.8	27.5	16.1
36.6	44.0	39.0	12.7	20.7	17.5	16.5	16.7	27.4	16.3
6.6	8.5	7.6	9.7	18.1	16.7	13.5	13.8	21.4	11.8
6.7	7.9	7.0	9.4	18.7	16.3	13.6	14.2	21.6	11.8
1,423.0	1,804.0	1,410.0	5.8	0.7	- 2.6	4.6	0.9	3.3	- 5.6
1,301.9	1,309.1	1,234.7	5.4	- 0.1	- 3.2	4.8	1.3	3.6	- 5.5
471.5	462.9	466.2	4.8	4.0	3.1	3.8	3.2	4.7	4.6
471.0	474.8	475.7	4.7	4.0	3.0	3.8	3.2	4.8	4.6
257.0	na	na	26.9	9.4	- 4.3	47.8	19.0	na	na
na	na	na	NA	0.0	0.0	na	na	na	na
40.1	na	na	31.5	14.4	6.3	7.9	- 10.4	na	na
60.6	na	na	31.4	14.6	7.9	3.2	- 8.9	na	na
37.8	na	na	19.0	- 5.8	29.1	11.9	45.5	na	na
24.1	na	na	12.3	- 9.3	28.9	13.3	44.4	na	na
6,775.9	6,680.9	6,215.4	- 7.7	- 5.8	- 3.5	- 0.9	0.7	2.0	2.0
102.3	100.6	92.8	- 2.8	1.1	0.8	1.6	1.4	1.5	2.1
97.1	96.8	96.0	- 2.7	1.0	0.8	1.7	1.4	1.6	2.2
13.5	na	na	3.8	47.1	49.7	25.7	32.8	na	na
763.0	1,342.0	1,104.0	4.2	- 0.4	- 12.9	- 2.8	- 23.0	25.8	26.3
8.1	14.7	13.4	- 7.9	- 1.0	- 11.1	- 33.9	- 61.3	- 20.9	- 33.8
9.5	16.9	15.2	- 11.4	- 0.6	- 11.8	- 31.9	- 61.3	- 21.2	- 33.1
24.0	40.3	29.9	13.1	9.7	- 6.1	6.8	- 10.4	11.3	- 27.9
34.0	44.5	34.8	14.6	10.0	- 5.8	2.7	- 9.4	11.2	- 27.4
59.1	19.3	21.1	- 1.4	84.6	64.1	40.1	522.4	- 24.0	129.4
2.5	9.9	12.3	- 6.8	- 58.4	6.6	- 1.4	- 85.6	- 22.3	- 62.6
35.3	35.1	35.1	3.6	5.4	2.8	3.7	3.8	4.2	6.0
35.0	35.8	36.0	3.6	5.4	2.9	3.7	3.9	4.0	6.1
40.3	40.4	39.5	- 1.4	9.7	2.2	2.6	2.3	3.6	2.1
39.7	40.6	39.6	- 1.6	0.7	2.2	2.6	2.4	3.6	2.0

ECONOMIC INDICATORS (continued)

	Quarterly Averages			
	1979			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
6. <u>TRANSPORT./COMMUNIC./UTIL.</u>				
Employment	27.5	27.8	28.2	29.1
7. <u>TRADE</u>				
Wholesale Employment ² (000)	20.8	21.2	21.6	22.0
Retail Employment ² (000)	80.7	82.5	84.3	85.0
Seasonally Adjusted*	83.3	82.4	82.6	84.4
Average Weekly Hours	34.5	35.3	35.8	35.2
8. <u>FINANCE</u>				
Bank Debits (\$ mil.)	5,910.2	10,958.6	8,518.1	9,140.7
Seasonally Adjusted*	5,918.3	10,356.5	8,419.6	9,791.3
New Bank Loans (\$ mil.)	235.1	255.7	268.1	260.6
Seasonally Adjusted*	239.9	257.9	276.8	246.8
Bank Demand Deposits (\$ mil.)	963.3	1,045.3	1,036.4	1,057.3
Bank Time Deposits (\$ mil.)	1,722.3	1,780.1	1,835.0	1,875.2
Total Savings Deposits (Savings and Loan Assoc.) (\$ mil.)	1,779.1	1,814.3	1,852.8	1,925.5
New Savings and Loans Received (\$ mil.)	118.2	115.4	148.1	146.8
9. <u>SERVICES AND TOURISM</u>				
Service Employment ² (000)	85.0	89.0	92.0	88.7
Seasonally Adjusted*	87.6	88.2	88.8	90.1
Lodging Employment ² (000)	8.9	9.4	9.6	8.8
Seasonally Adjusted*	9.4	9.3	8.8	9.2
Visits to National Parks/Monuments (000)	95.3	201.4	251.2	74.4
Seasonally Adjusted*	173.6	165.9	148.1	139.9
10. <u>GOVERNMENT</u>				
Federal Employment ² (000)	35.4	36.6	37.9	37.0
State Employment ² (000)	33.7	33.5	32.0	35.8
City and County Employment (000)	50.7	51.4	48.1	51.8

* Seasonally adjusted figures are economic time series which have had seasonal variations removed with statistical processes. These purely seasonal variations include the effects of: the opening and closing of school, the annual pattern of seasons (especially applicable to agricultural data), holidays, and other annually recurring events which influence economic activity. By removing these seasonal variations from raw economic data, month-to-month analysis of trends and unusual fluctuations in economic activity is facilitated.

na Not available.

NA Not applicable.

1 Number of persons by place of residence.

2 Number of jobs by place of work.

ECONOMIC INDICATORS (continued)

1979 December	1980		Percentage Change				Percentage Change		
	January	February	I 1978- I 1979	II 1978- II 1979	III 1978- III 1979	IV 1978- IV 1979	Dec. 78- Dec. 79	Jan. 79- Jan. 80	Feb. 79- Feb. 80
29.3	28.4	28.3	7.2	6.1	5.7	5.1	4.6	3.7	3.3
22.1	21.9	22.0	8.5	6.5	4.9	6.3	5.7	5.8	5.8
86.6	83.7	82.3	4.3	1.5	1.6	2.9	2.7	3.0	2.6
84.6	86.1	85.3	4.2	1.5	1.7	3.0	2.8	3.0	2.6
35.0	33.8	34.5	- 2.8	- 1.1	- 1.3	- 1.0	- 2.8	- 1.2	0.0
10,110.9	13,302.6	12,417.9	86.1	272.7	158.3	163.4	212.1	163.6	104.5
11,099.2	12,989.8	12,788.3	85.8	271.3	154.1	162.1	215.0	166.7	93.8
266.4	298.9	231.7	- 0.1	1.3	11.0	- 2.6	2.8	21.5	11.5
242.0	296.9	251.8	0.2	1.2	11.7	- 4.1	3.6	23.9	6.5
1,111.0	949.0	972.9	0.2	3.7	- 1.1	- 0.2	1.7	- 1.2	1.5
1,873.3	1,857.7	1,902.3	11.4	12.5	12.3	11.7	10.0	9.7	11.1
1,942.2	1,963.5	1,978.8	17.0	14.7	12.1	12.4	12.1	11.5	11.5
102.8	212.5	147.5	24.1	26.1	51.1	45.2	5.8	35.9	58.1
88.7	88.5	89.7	3.1	1.9	0.8	0.7	0.9	6.0	5.0
90.9	91.8	92.6	3.1	1.9	0.9	0.6	0.9	6.1	5.0
8.7	8.6	8.5	4.0	1.5	- 4.3	- 2.6	- 3.3	- 3.4	- 3.4
9.2	9.2	9.1	3.9	1.4	- 4.3	- 2.6	- 3.3	- 3.3	- 3.5
65.2	51.2	59.9	- 7.6	3.4	- 6.9	- 5.8	10.9	22.7	- 12.1
146.1	138.7	128.7	-11.6	8.2	- 6.9	- 3.1	14.9	19.7	- 17.6
36.8	36.8	37.1	3.8	3.9	5.5	3.4	2.5	4.6	4.5
35.8	33.4	35.9	10.1	6.8	2.0	5.5	3.8	3.4	4.7
52.0	51.8	52.8	1.9	2.2	0.1	3.6	0.4	3.6	3.7

Sources: New Mexico Employment Security Department: Sections 1, 5, 6, 7, 9, 10; Dun and Bradstreet, Inc.: Section 1; USDA Statistical Reporting Service: Section 2; Oil Conservation Commission: Section 3; New Mexico Bureau of Revenue: Section 3; Building Inspectors' reports, 18 cities: Section 4; F. W. Dodge Co. (a division of McGraw-Hill, Inc.): Section 4; Federal Power Commission: Section 6; Bank report (36): Section 8; Federal Home Loan Bank of Little Rock: Section 8; United States Department of the Interior, National Park Service: Section 9.

NUMBER OF BUILDING PERMITS--SELECTED CITIES

	Residential				Nonresidential			
	February 1979	February 1980	Cumulative Total Through February		February 1979	February 1980	Cumulative Total Through February	
			1979	1980			1979	1980
Alamogordo	24	9	39	18	4	7	8	9
Albuquerque	203	128	425	237	19	26	29	51
Artesia	1	12	3	12	5	6	5	11
Carlsbad	3	3	6	6	2	1	6	1
Clayton	0	0	4	0	0	0	0	0
Clovis	29	3	45	15	3	1	9	3
Deming	5	3	11	12	1	0	1	1
Farmington	21	23	27	41	4	6	10	10
Gallup	1	1	2	3	2	2	2	3
Grants	12	10	18	17	0	1	1	2
Hobbs	14	13	21	34	3	2	4	4
Las Cruces	23	25	63	61	11	3	19	6
Las Vegas	1	2	2	3	0	0	1	0
Lordsburg	1	0	2	0	0	0	1	3
Portales	3	1	8	3	2	1	2	1
Raton	0	0	1	1	0	0	0	0
Roswell	22	20	35	38	10	6	17	10
Santa Fe	42	22	78	35	4	3	5	3
Tucumcari	1	0	1	1	1	0	1	1
Total	406	275	791	537	71	65	121	119

Source: Individual reports by city building inspectors.

VALUE OF BUILDING PERMITS--SELECTED CITIES

	Residential				Nonresidential			
	February 1979	February 1980	Cumulative Total Through February		February 1979	February 1980	Cumulative Total Through February	
			1979	1980			1979	1980
Alamogordo	\$ 917,000	\$ 390,772	\$ 1,655,500	\$ 765,637	\$ 6,300	\$ 276,900	\$ 136,300	\$ 280,900
Albuquerque	11,305,047	6,713,697	22,924,158	14,215,490	3,295,784	8,221,540	6,023,558	13,808,994
Artesia	36,000	467,000	98,000	467,000	8,750	139,000	8,750	233,500
Carlsbad	184,000	116,600	278,200	257,900	77,340	40,000	442,040	40,000
Clayton	0	0	94,488	0	0	0	0	0
Clovis	807,380	114,562	1,268,991	384,988	47,000	15,000	326,990	202,140
Deming	147,500	95,900	366,000	381,550	15,000	0	15,000	1,574,100
Farmington	767,876	914,267	975,075	1,522,347	336,095	571,575	791,366	761,183
Gallup	54,052	61,756	96,980	160,308	590,000	2,581,990	590,000	2,601,990
Grants	436,500	561,600	588,340	881,677	0	85,000	10,000	102,000
Hobbs	574,000	598,000	924,000	1,704,000	498,585	58,600	546,585	271,600
Las Cruces	2,232,500	981,578	4,265,031	3,177,878	42,129	789,700	518,954	1,288,303
Las Vegas	20,558	78,614	41,838	106,614	0	0	34,000	0
Lordsburg	26,500	0	45,000	0	0	0	73,500	132,000
Portales	131,000	50,600	329,800	124,892	440,300	450,000	440,300	450,000
Raton	0	0	19,440	18,720	0	0	0	0
Roswell	926,000	859,000	1,377,500	1,822,000	56,550	410,695	88,950	418,435
Santa Fe	1,669,911	1,410,115	3,440,790	2,062,115	973,000	2,597,401	1,193,000	2,597,401
Tucumcari	30,000	0	30,000	30,000	3,000	0	3,000	56,993
TOTAL	\$20,265,824	\$13,414,061	\$38,819,131	\$28,083,116	\$6,389,833	\$16,237,401	\$11,242,293	\$24,819,539

Source: Individual reports by city building inspectors.

HOURS AND EARNINGS OF PRODUCTION CONSTRUCTION AND NONSUPERVISORY EMPLOYEES

New Mexico

	Average Weekly Hours			% Change	Average Hourly Earnings			% Change
	Feb. 1980 ^p	Jan. 1980	Feb. 1979		Feb. 1980 ^p	Jan. 1980	Feb. 1979	
Mining	43.6	44.2	44.5	-2.0	8.80	8.86	7.93	11.0
Construction	34.7	34.9	34.4	0.9	9.31	9.34	8.38	11.1
Manufacturing	39.5	40.4	38.7	2.1	5.76	5.72	5.19	11.0
Durable Goods	41.5	41.9	39.8	4.3	6.10	6.10	5.50	10.9
Nondurable Goods	36.2	37.7	37.0	-2.2	5.08	5.02	4.68	8.5
Communication and Utilities	44.4	44.1	40.9	8.6	7.42	7.45	7.05	5.2
Trade ¹	34.5	33.8	34.5	0.0	6.03	5.89	5.31	13.6
Banking	39.9	41.1	39.5	1.0	3.79	3.77	3.66	3.6

p Preliminary.

¹ Excludes eating and drinking places.

Source: New Mexico Employment Security Department.

ESTIMATED CIVILIAN LABOR FORCE AND EMPLOYMENT

	New Mexico			Albuquerque SMSA ¹		
	February 1979 ^r	January 1980 ^r	February 1980 ^p	February 1979 ^r	January 1980 ^r	February 1980 ^p
TOTAL CIVILIAN LABOR FORCE	519,200	541,400	540,500	196,700	205,700	205,400
Employment ²	483,800	495,500	499,400	184,300	188,400	190,900
Unemployment	35,400	45,900	41,100	12,400	17,300	14,500
Percentage of Labor Force	6.8	8.5	7.6	6.3	8.4	7.1
Nonagricultural Wage and Salary Employment	445,900	462,900	466,200	181,200	188,300	190,200
Mining	25,400	27,500	27,600	na	na	na
Contract Construction	32,500	34,200	34,000	14,600	15,100	15,200
Manufacturing	33,100	35,100	35,100	16,800	18,500	18,600
Durable Goods	18,900	20,900	21,000	11,300	13,000	13,000
Nondurable Goods	14,200	14,200	14,100	5,500	5,500	5,600
Transportation and Public Utilities	27,400	28,400	28,300	11,000	11,800	11,700
Trade	101,000	105,600	104,300	46,000	47,600	47,100
Wholesale	20,800	21,900	22,000	12,500	13,200	13,200
Retail	80,200	83,700	82,300	33,500	34,400	33,900
Finance, Insurance, and Real Estate	20,400	21,600	21,400	10,300	11,100	11,100
Services and Miscellaneous	85,400	88,500	89,700	41,300	43,000	43,400
Government	120,700	122,000	125,800	41,200	41,200	43,100
Federal	35,500	36,800	37,100	12,300	12,400	12,900
State	34,300	33,400	35,900	10,700	10,600	11,300
Local	50,900	51,800	52,800	18,200	18,200	18,900

na Not available, less than 50 jobs.

p Preliminary.

r Revised.

¹ Albuquerque Standard Metropolitan Area includes Bernalillo and Sandoval Counties.² Includes labor disputes.

Source: New Mexico Employment Security Department.

ALBUQUERQUE¹ BANKING DATA (\$000s)

	February 1979	February 1980	% Change February 1979- February 1980
BANKS			
Bank Debits	\$5,134,037.5	\$11,125,007.7	116.7
New Loans and Discounts	101,521.7	125,090.0	23.2
Demand Deposits	479,028.6	495,248.2	3.4
Time Deposits	876,971.2	960,920.9	9.6
SAVINGS AND LOAN			
Savings Deposits	\$ 801.3	\$ 898.6 ^p	12.1
New Savings Received	51.1	77.9 ^p	52.4

p Preliminary.

¹ Bernalillo County for bank information, Albuquerque SMSA for savings and loan data.

Sources: Five reporting banks and Federal Home Loan Bank of Little Rock.

CONSUMER PRICE INDEXES AND INDEXES OF SELECTED CATEGORIES U.S. City Average (1967=100)

	All Urban Consumers				Revised Series, Wage Earners and Clerical Workers			
	Jan. 1980	Feb. 1980	% Change		Jan. 1980	Feb. 1980	% Change	
			Feb. 79- Feb. 80	Jan. 80- Feb. 80			Feb. 79- Feb. 80	Jan. 80- Feb. 80
ALL ITEMS	233.2	236.4	14.1	1.4	233.3	236.5	14.2	1.4
Food	243.8	244.9	7.3	0.5	244.0	245.2	7.3	0.5
Housing	247.3	250.5	16.2	1.3	247.3	250.5	16.3	1.3
Apparel and Upkeep	171.0	171.9	6.5	0.5	169.8	171.5	6.1	1.0
Transportation	233.5	239.6	22.5	2.6	234.1	240.2	22.5	2.6
Medical Care	253.9	257.9	10.9	1.6	254.9	258.7	11.5	1.5
Entertainment	195.3	197.8	8.0	1.3	193.9	196.2	7.6	1.2
Other Goods and Services	206.3	208.1	8.4	0.9	206.0	207.7	8.2	0.8

Source: U.S. Department of Labor, News.

[Editor's Note: The Albuquerque Food Price Index is being discontinued for budgetary reasons. The April index will be the last collected and published and will appear in the June issue of *New Mexico Business*]

ALBUQUERQUE FOOD PRICE INDEX: FEBRUARY 1980
June 1974 = 100 (all items)

	Feb. 80 Index	June 74 Feb. 80	% Change Feb. 79 Feb. 80	Jan. 80 Feb. 80
ALL FOOD ITEMS	155.2	55.2	2.7	0.5

Cereals and Baked Products	152.0	52.0	20.5	1.2
Meat, Fish, Poultry	169.4	69.4	3.6	-0.4
Fruits & Vegetables	146.3	46.3	-9.5	5.5
Dairy Products	142.9	42.9	9.4	-0.6
Other Food Items	151.8	51.8	0.7	-2.0

Food Items	Quantity	February 1980		% Change		
		Price	Index	June 74 Feb. 80	Feb. 79 Feb. 80	Jan. 80 Feb. 80
Flour, all purpose	5 lb	\$1.08	93.4	-6.6	13.9	-1.3
Corn Flakes	12 oz	0.67	173.8	73.8	9.7	0.1
Bread, white	1b	0.56	158.3	58.3	29.0	0.1
Cookies, cream	16 oz	1.25	158.7	58.7	18.9	6.5
Hamburger	1b	1.66	192.4	92.4	6.6	4.9
Round Steak, bone-in	1b	2.52	200.9	100.9	10.9	0.3
Sirloin Steak, boneless	1b	2.99	172.9	72.9	21.8	-8.7
Chuck Roast, blade	1b	1.99	261.7	161.7	18.3	5.3
Beef Liver	1b	1.20	128.5	28.5	39.1	-9.4
Pork Chops	1b	1.66	117.6	17.6	-33.6	-9.7
Bacon, sliced	1b	1.97	170.7	70.7	-9.1	-1.1
Pork Roast, loin	1b	1.54	113.8	13.8	-21.0	5.5
Frankfurters	1b	2.16	171.5	71.5	17.7	-2.3
Fryers, whole	1b	0.63	127.4	27.4	-6.1	-5.6
Tuna, light chunk	6 oz	0.96	166.9	66.9	7.5	1.5
Bananas	1b	0.35	175.1	75.1	18.4	1.2
Oranges	dozen	1.36	153.9	53.9	-25.7	14.8
Lettuce	1b	0.40	91.9	-8.1	-49.8	18.3
Potatoes, except baking	10 lb	1.45	75.5	-24.5	41.5	-3.4
Tomatoes	1b	0.46	87.5	-12.5	2.9	-12.3
Carrots	1b	0.52	226.3	126.3	19.4	30.4
Onions, yellow	1b	0.19	138.8	38.8	-32.0	14.7
Fruit cocktail	#303	0.70	188.7	88.7	19.7	12.3
Tomatoes, canned	#303	0.55	168.8	68.8	0.5	0.7
Peas, canned	#303	0.43	145.5	45.5	-2.9	0.6
Frozen orange juice	6 oz	0.50	187.8	87.8	-6.9	-0.5
Frozen broccoli spears	10 oz	0.60	146.9	46.9	-26.8	1.4
Milk	quart	0.56	134.0	34.0	7.0	-1.1
Evaporated milk	13 oz	0.48	163.7	63.7	11.0	1.2
Ice cream	1/2 gal	1.75	150.7	50.7	14.9	2.7
Cheese, sliced	6 oz	0.91	153.5	53.5	10.4	-3.4
Eggs, AA large	dozen	0.78	127.4	27.4	4.9	-0.2
Margarine	1b	0.72	118.2	18.2	-0.1	0.2
Sugar	5 lb	1.53	106.0	6.0	15.0	7.4
Coffee	1b	3.22	249.1	149.1	10.7	0.6
Instant coffee	6 oz	3.38	213.4	113.4	4.6	1.4
Cola drink	10 oz ctn	1.31	167.6	67.6	3.8	-2.0
Chicken noodle soup	10 oz	0.31	138.3	38.3	8.7	-0.6
Baby food, strained	4 oz	0.23	172.1	72.1	6.1	-3.5
Frozen french fries	9 oz	0.32	149.1	49.1	-37.1	-22.4

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Evolving Urban Water Pricing Policies in Selected New Mexico Cities

[This article is based upon Chapter Three of "Case Studies in the Development of New Mexico Water Resource Institutions: The Middle Rio Grande Conservancy District and Urban Water Pricing," Technical Completion Report, New Mexico Water Resources Research Institute Project No. 1345640, January, 1980. The authors are Brian McDonald, John Tysseling, Michael Browde and Lee Brown.]

Introduction

There are many institutions that govern water management in the West today. These institutions may be defined not just as an organization (e.g., a conservancy district, a ditch company, the Bureau of Reclamation) but, as Dean Mann has pointed out, by "the rules, patterns of behavior, the values and purposes, and organizational structures."¹ Urban water pricing is such a water institution. Organized as the city water department, or in some cases as a private utility, its rules (rate structures, water waste ordinances, etc.) allocate city water among competing customers, encourage social values such as green lawns and parks, and influence citizens' attitudes toward water use and conservation.

Since in New Mexico, as in most other Western states, urban water use accounts for only 5 to 10 percent of total water supplies, some may think it unimportant to study urban water pricing. However, urban water demand today represents one of the fastest growing areas of water use in New Mexico and the arid Southwest, in general. And this growth is taking place in the midst of predominant agricultural communities. Expanding urban water use comes with the dramatic growth in city population, the rise in per capita income, and the concentration of commercial and industrial development in urban centers. It is this feature about urban water use that places it immediately up against the dominant social and economic force in western water management today: a fixed and fully appropriated water supply. How urban water institutions react and adapt in this environment of fixed water supplies² will be an important determinant of the future economic well-being of the cities and their citizens as well as a reflection of changing social values and attitudes toward water and water use.

The stress on urban water institutions is already evident in many Southwestern cities. Since 1974 Tucson has experienced large increases in water rates as well as major changes in the rate structure itself in order to encourage water conservation and to provide the revenue for capacity expansion. Denver has experienced rapid growth since the 1950s and today faces serious water supply constraints. During the 1976-1977 drought period the city resorted to water rationing to allocate city water. To accommodate future growth, Denver must find new sources of water (e.g., buying existing water rights or transmountain diversion projects) and make system capacity expansion, both requiring increases in water rates and/or changes in water rate structures in order to raise the necessary financing. Here in New Mexico, both Albuquerque and Santa Fe have experienced recent changes in water pricing.

In this chapter the water pricing of four New Mexico cities will be analyzed: Albuquerque, Santa Fe, Belen and Los Lunas. This will include a history of water rates and water rate structures as well as the social and economic conditions which have influenced them. In the case of Albuquerque and Santa Fe, these two New Mexico cities have experienced significant changes in urban water pricing. The forces largely responsible for these changes will be examined and the adaptation of the urban water institution (i.e., the rate changes) to these forces will be evaluated. While Belen and Los Lunas have also had some recent rate increases, they have not been as dramatic as in Santa Fe or Albuquerque. The social and economic forces, while present in Belen and Los Lunas, are not of the same degree and magnitude as in the case of Santa Fe and Albuquerque. In this sense Belen and Los Lunas represent a control group in the evaluation here of the adapta-

tion of urban water institutions to changing social and economic environments.

Urban Water Management Environment

Before turning to the specific analysis of each of these four New Mexico cities, it will be useful to provide a more detailed discussion of the environment within which urban water institutions must operate. Earlier the condition of a fixed and fully appropriated water supply combined with expanding water use was presented as the dominant force acting upon urban water institutions. However, there are other equally important forces to which these institutions must adapt. They include the economics of water distribution, federal environmental regulations, and the uncertainties surrounding water availability due to outstanding legal claims to water from Indians and the federal government.

Full Appropriation

The Rio Grande basin, like many other river basins in the West, is fully appropriated. This condition of full appropriation has resulted from legal, man-made constraints rather than an actual physical constraint on water availability. New Mexico's share of the surface flows of the Rio Grande river is now sufficient to meet only the claims of existing water right holders. The groundwater in the Rio Grande basin has been carefully controlled by the state engineer's office since 1956 when the Rio Grande was designated a declared basin. Any new, additional appropriations of water in the Rio Grande basin would injure the interests of other water right holders and thus are not allowed. Any new user of water or expanding user (as is the case with New Mexico cities) in the Rio Grande basin must acquire the right to appropriate additional water from another existing user by buying or transferring existing water rights. In the era before full appropriation, a new user would simply have begun to divert the water and made application to the state engineer to establish the water right.

Full appropriation in the Rio Grande as well as other western basins is likely to remain as a water supply constraint in the future. President Carter cancelled many planned federal water projects soon after being inaugurated and has initiated

tougher guidelines for the approval of new federal projects designed to develop new water sources. In the past these projects served to expand the usable water supply by capturing seasonal water runoff in storage reservoirs for controlled release as the water was needed. The availability of new water from federal projects is something New Mexico cities cannot count on in the future to help out with their need for more water.

The condition of full appropriation has many implications for urban water institutions. First of all, additional water for expanding urban use must come from other water rights holders, primarily irrigation water rights. These rights may be purchased and, as Khoshakhlagh, Brown and DuMars³ have shown, this may entail considerable cost to the city. Their analysis shows that in 1976 the right to an acre foot of water in the Rio Grande (excluding Santa Fe) sold for \$786.16 compared to \$267.00 in 1962. In Santa Fe the right to an acre foot sold for \$10,909.00 in 1975 compared to \$900.00 in 1963.⁴

However, water rights purchase is not the only option available to a city in need of additional water. The City of Fort Collins, Colorado solved this problem by requiring that owners of lands annexed into the city provide the city three acre feet of water per acre or supply the money equivalent.⁵ The City of Westminster, Colorado has worked out an innovative procedure whereby the nearby ditch company and the city share the same water supply. The city makes first use of the water and then returns it to the ditch company's canals as treated effluent for re-use.⁶ Water rights condemnation is another, although politically charged, alternative open to New Mexico cities. Even in this case compensation would have to be paid for condemned water rights obtained.

A second implication of the full appropriation condition for urban water institutions follows from the first one above. Namely, if additional water for urban use must come from existing uses, then the city will likely find itself in competition not only for the water itself but also for the basic values served by the water. Most existing water rights in New Mexico are held for irrigation farming. As water shifts from irrigation to urban uses, there will be a decline in the irrigated

sector and a decline in the social values associated with the rural, agricultural way of life. This conflict is already evident in Colorado where large transfers of water rights out of irrigated agriculture have taken place and pressures to slow this transfer process have arisen.⁷

A final implication of the full appropriation condition is that urban water institutions must be more concerned with the *efficient* use of urban water. This implication holds for all water users, as well. If the water supply is fixed today, then continued economic development in water scarce areas can only take place if the existing water is allocated to its highest valued uses. The economic marketplace and the price system allows for such an efficient allocation of resources. And there is some evidence that economic markets for water rights are becoming more sophisticated today.⁸ For urban water institutions more efficient use of existing city water may forestall the future need to purchase additional water rights for expanding urban use. This concern for efficient use of water has implications for the pricing of urban water, as well. We will return to this topic at a later point.

Economics of Urban Water Distribution

A municipal water system is a classic example used by economists to illustrate a "natural monopoly," where a firm's average cost of providing water services to urban customers reaches a minimum at an output rate that is large enough to satisfy the entire demand for water.⁹ Were two firms allowed to supply water within the city, each would end up supplying a part of the market at higher average cost. Thus, a single firm or monopolist—the city water department or a private utility—will end up providing the least cost supply of water to urban residents.

Economies of scale in the acquisition, treatment and distribution of water are largely responsible for this outcome. Seasonal surface water flows must be impounded in reservoirs so that water will be available year round for urban water use; ground water must be pumped from aquifers below the surface. Prior to distribution the water must be treated to comply with the federal government's Safe Drinking Water Act. The water must then be distributed to thousands of urban

customers by a series of underground pipes and lifting stations so that water is available on demand to every customer. Finally, each customer must be metered and billed on a regular basis.¹⁰ The economies of scale are most evident in the distribution system of pipes and lifting stations. It makes little sense (economic or otherwise) to have duplicate (smaller) pipes run down every street of the city rather than one large pipe that can service all customers. Economies of scale also exist in the construction of storage reservoirs, the size and operation of water wells, and the metering and billing of customers.

Declining average cost for urban water distribution, however, applies only for the present capacity in place. Once urban water demand begins to exceed established supply capacity, the city must undertake costly capacity expansion. Additional water rights may have to be purchased at considerable expense, as noted above; additional storage reservoirs must be built; ground water must be pumped from greater depths with associated higher pumping costs. As cities, originally developed along river valleys, now expand to the surrounding heights, distribution costs rise as water now must be delivered to higher elevations and to farther distances. Thus, in order to accommodate expanding population and water demand, cities are faced with the choice of either costly increments to their existing water supply capacity or the more efficient use of its existing water supplies and distribution capacity.

Federal Environmental Regulations

There are two federal environmental regulations which have impacted urban water institutions in recent years. First, the Safe Drinking Water Act of 1971 issued standards relating to the clarity, turbidity and chemical treatment of drinking water. This regulation impacts mostly those cities dependent upon surface water as a source of city water and requires expensive treatment of water before it enters the distribution system. Ground water requires less treatment because of the natural filtration which occurs as the water seeps into the water table. Santa Fe is one New Mexico city which uses surface water for part of its city water. The Public Service Com-

pany of New Mexico, which operates the Santa Fe water system, was required to install a \$5 million treatment facility in 1971 in order to comply with the regulation.¹¹

The other federal environmental regulation which is a concern to urban water institutions is the Federal Water Pollution Control Act Amendments of 1972—Public Law 92-500. While on the surface this act pertains to federally funded sewer treatment facilities, it may impact urban water pricing because of its requirement that each user (of city sewer systems) pay its proportionate share of the operations, maintenance and replacement costs of the sewerage facilities receiving a federal grant.

Many cities, e.g., Albuquerque, provide both water and sewer services to customers. The pricing structure for water and sewer services are generally dependent, i.e., the charge for sewer bears some relation to water used. And the present level of the water charge and the sewer charge may not reflect the actual cost of separate water and sewer services. In the case of Albuquerque it was found that revenue from water rates exceeded the actual cost of water delivery while sewer charges did not cover the actual cost of sewer services. However, the combined charges from water and sewer were sufficient to cover the combined costs of water and sewer. In other words, Albuquerque water revenues subsidized sewer operations. Under PL92-500 this is not allowed. In Albuquerque, this was a major factor for the recent revision in city water rates.¹²

The implications of these federal environmental regulations for urban water institutions are obvious. The Safe Drinking Water Act requires city water to be treated to a standard, necessitating costly water treatment facilities. These costs must ultimately be recouped through the water rate structure. Compliance with the Safe Drinking Water Act also substantially increases the cost of future capacity expansion as well. PL92-500 will impact those urban water institutions which also supply sewer services and use a joint water-sewer customer billing procedure. In those cases, the separate cost of providing sewer services must be determined and the sewer and water rates restructured so that sewer revenues recover sewer costs.

Uncertainty of Water Rights

To complete this description of the environment within which urban water institutions operate, some mention should be made of the outstanding claims to water that exist under the *Winters* doctrine for Indians and the reserved rights doctrine for the federal government. The decade of the seventies has seen the steady strengthening of Indian assertions of rights to water, land, and other natural resources. Since, as a matter of treaty and statute, Indian affairs are almost exclusively within federal jurisdiction, resolution of *Winters* doctrine water rights requires federal action rather than resolution within the New Mexico water law of prior appropriation.

The question of federal reserve rights parallels the Indian *Winters* doctrine claim. With the substantial federal presence in New Mexico in national parks, forests and wilderness areas, federal laboratories and military reservations, it is inevitable that as activity within these installations grows, their demand for water (implicit and unquantified when these federal installations first were established) will become explicit and definite.

In both instances—Indian *Winters* doctrine rights and federal reserve rights—these new uses of water arrive after the water within the basin has already been fully appropriated by other users. This notion of implicit reservation of water is in clear conflict with the prior appropriation system of water law already in place within New Mexico. As future court decisions make these new claims to water more quantified, existing water users within fully appropriated basins may face reduced water supplies.

Efficient Water Use and Urban Water Pricing

Twice above it has been mentioned that one solution to the problems confronting urban water institutions was the more efficient use of existing water supplies and capacity. In order to forestall the need to acquire costly water rights or to make costly capacity expansion, expanding urban water use can be accommodated by using existing supplies and capacity more efficiently. By efficiency here we mean, "doing more with the same or less input." Directly applied to the urban water situation, efficiency means providing water services to an expanding urban population with the same

amount of water *supply* and capacity. This obviously must imply a reduction in per capita water use or demand.

Per capita water demand can be reduced by a variety of methods. Water can be strictly rationed with prohibitions on certain water activities such as lawn sprinkling and car washing; water conservation can be encouraged affecting people's attitude toward water use by media campaigns, landscape restrictions, and construction codes concerning water-using appliances; or the pricing mechanism can be used to restrict the demand for water. At higher and higher prices for water, customers will begin to voluntarily reduce their water demand.

Of course, resorting to the pricing mechanism assumes that water demand does respond to price changes. Economists refer to this as the elasticity of demand. If demand is inelastic, there will be little reduction in water demand as price increases; if demand is elastic on the other hand, there will be a large reduction in water demand as price increases. The actual elasticity is subject to empirical testing.

Some recent studies by economists have shown that the demand for municipal water is sensitive to price. Howe and Linaweaver¹³ estimated the elasticity of demand for two categories of residential water use: in-house domestic use and summer sprinkling use. They found that, while the demand for domestic water use was not sensitive to price, the demand for summer sprinkling use was. Hanke studied the effect on residential water demand due to the installation of meters in Boulder, Colorado.¹⁴ Metering had the impact of now imposing a price to the customer for additional water consumption. The initial effect of the metering was a substantial decrease in both domestic and sprinkling water demand. After awhile, however, the decreased domestic use demand stabilized while the demand for sprinkling water continued to decrease. The Public Service Company of New Mexico (PNM) has conducted demand elasticity studies of its Santa Fe and Las Vegas, New Mexico service areas. PNM found that residential winter water use (base domestic use) was not sensitive to price; however, residential summer water use (includes lawn sprinkling use) showed some responsiveness to price

changes.¹⁵ All of these studies indicate that some categories of water use are sensitive to price and that there is some expectation that water pricing can be a successful policy tool to use existing city water supplies more efficiently.

In the past urban water institutions have been most concerned with alternatives for increasing water supplies. This concern was based on the notion that water is a necessity and must be provided without regard for cost (or price). This concern also implies that the demand for urban water is inelastic. Water demands are viewed as fixed requirements, not sensitive to the price charged. As these water demands grow, they must be met by constructing additional water supply capacity.¹⁶

Historical pricing methods used by urban water institutions also have followed from the notion that demand is inelastic. Pricing of urban water has been oriented toward recovering the costs of providing water services, i.e., average cost pricing. And since average costs declined as water usage increased *using the existing capacity*, the rate structure was most often of a declining block rate nature where the price of additional water used declined.

If indeed the demand for water is somewhat elastic, this will have an important implication for urban water institutions in the future if traditional pricing practices are continued. As indicated before, future capacity expansion for most New Mexico cities will be expensive. The average cost of water service will rise; therefore, price will rise. If the demand for water responds to these price increases, projections of water usage upon which capacity expansion was planned may prove inaccurate resulting in over-expansion of capacity.

The declining block pricing structure also provides no incentive for water conservation. It signals the urban water user that water is cheap; the more you use, the less you pay. This results over time in deep-seated attitudes toward water use. For example, it shapes people's attitudes about excessive water use, choices with respect to exterior landscaping, and the installation of water-using appliances and fixtures in homes. These attitudes will be difficult to turn around where the new environment facing urban water institutions calls for more efficient water use or water conser-

vation. Thus, attempts to use the water pricing structure to reduce demand are likely to meet strong public resistance in the future.¹⁷

Marginal Cost Pricing and Economic Efficiency

Above we used a general definition of efficiency and indicated how water pricing can be used to provide expanding water services with the same supply of water. Economists have a more specific definition of efficiency which states that an allocation of resources is efficient when the price of each resource is equal to the marginal cost of the resource. Price represents the "value" per unit of the resource to the consumer. The marginal cost is the increase in the total cost to produce the last unit. When price exceeds the marginal cost, consumers obtain more "value" from consuming the last unit of the resource than it cost to produce it. Thus, society would be better off if more of the good were consumed. In order to encourage consumption, the price must be lower. On the other hand, if price is less than marginal cost, then the "value" of the last unit consumed is less than the costs of producing the last unit. Society would be better off if less of the good were consumed. In order to discourage consumption, the price must be raised. Only when price equals marginal cost will society be obtaining the maximum benefit from the consumption of a resource.

When the marginal cost of producing the last unit of water equals the average cost of providing water, the marginal cost pricing principle of the economist coincides with the average cost pricing methods of most urban water institutions. However, when average cost is declining, as it does with expanding use of existing water supply capacity, marginal cost is less than the average. In this case, average cost pricing results in a higher price charged for water and less water delivered to consumers than is socially optimal. However, as indicated before, when water supply capacity is strained and expansion must be made, this will result in significant cost increases for urban water institutions. That is, the marginal cost of producing extra water will exceed the average cost of the system. Under these circumstances average cost pricing results in too low a price charged for water and over-use of water. Marginal cost pricing

offers not only a model for optimal resource allocation but also a pricing principle which will avoid the over-use of water and the need for costly water capacity expansion.

Marginal cost pricing has other applications for urban water institutions, some of which have already been adopted, as we shall see. The cost of delivering urban water is not the same for every customer. While it would be difficult to treat each customer separately, certain classifications of customers can be made where the cost of water delivery generally varies between customer classes. Marginal cost principles suggest that different prices should be set for different customer classes where the marginal cost of water varies. For example, water flow and pressure requirements of commercial and industrial water users may entail more costly water connections and pumping than for residential customers. Urban water use has a seasonal and temporal pattern in most cities, with peak water demand occurring in the summer months and during the daylight hours. The marginal cost of water in the winter is simply the extra operating cost to treat and pump the water. In the summer the marginal cost is the extra operating cost *plus* capacity expansion costs necessary to accommodate expanding peak usage. This would suggest a summer/winter rate differential to reflect differences in marginal cost of seasonal delivery. A similar argument could be made for time of day usage, where rates should vary depending upon the time of the day water is used.

Distance and elevation are also factors in the cost of water delivery. Pumping costs are directly associated with the distance over and the elevation to which water must be pumped. Marginal cost principles suggest different water rates based upon these factors. In fact, such rate differentials were initially implemented in Tucson, Arizona but were abandoned after negative public reaction. A pressure zone surcharge was recommended to the City of Albuquerque; however, it was not implemented.¹⁸

Santa Fe

The Santa Fe municipal water system is unique in two respects. First of all, since 1879 domestic water service to the city has been provided by a private company. Since 1946 the city has been

served by Public Service Company of New Mexico (PNM) on a franchise basis with the customer's and the company's interests overseen by the New Mexico Public Service Commission. This is in contrast to most other New Mexico cities which provide their own water service through a city water department. Secondly, Santa Fe relies upon surface water for part of its water supplies unlike other cities which use groundwater exclusively.

Santa Fe is the third largest city in New Mexico with an estimated population in 1979 of 46,753. Table 1 displays the population growth of Santa Fe since 1930 compared to the state of New Mexico as a whole. Santa Fe has grown nearly twice as fast as the state and has nearly tripled in the forty year span of 1930-1970. Since 1970 its population has increased another 13.6 percent. These population changes obviously have placed pressures on the demands for water use in Santa Fe. Coupled with the population increases has been an increase in the per capita water use.¹⁹

TABLE 1
SANTA FE AND NEW MEXICO POPULATION

Year	Santa Fe	New Mexico
1930	11,176	423,317
1940	20,325	531,828
1950	27,998	681,187
1960	33,394	954,000
1970	41,167	1,023,000
1930-1970 (% change)	268%	142%

Source: U.S. Department of Commerce, Bureau of the Census, *Census of the Population*.

The water supply for Santa Fe comes from three sources: the Santa Fe River surface flows, city wells and the Buckman well field along the Rio Grande. The Santa Fe River was the principle source of water for the city until 1946 when six wells were drilled within the city. In the late 1960s it was realized that these sources were insufficient to meet future water demand as the city and its population grew. The Buckman well field was then developed. It sits fourteen miles from the city at a 1,500 foot lower elevation than the city itself.

The city water system²⁰ has the right to 4,720

acre feet of water from the surface flows of the Santa Fe River; it has a permanent right to 4,800 acre feet from the city wells although the present peak capacity of the wells is only 3,600 acre feet. In 1977, the city water system was granted a permanent pumping permit for the Buckman well field from the State Engineer for 10,000 acre feet. However, this permit requires that the State Engineer set the amount to be pumped each year. PNM also is required to retire certain water rights along three tributaries of the Rio Grande—the Pojoaque, Nambe and Tesuque—to offset the impact of their pumping on surface right holders along the Rio Grande. The present estimated pumping capacity of the Buckman well field is 5,000-6,000 acre feet. All three sources then provide Santa Fe with an estimated annual water supply of 13,320-15,000 acre feet.

The Santa Fe City Planning Department has made projections of future city water demand. They are presented in Table 2. These projections are based upon a continued trend in both population and per capita water demand. Their analysis indicates that Santa Fe would run out of water by 1985, assuming a dry year requiring 20 percent more water than during an average year.

TABLE 2
PROJECTED SANTA FE WATER DEMAND

Year	Population	Per Capita Demand	Average Year Demand	Dry Year Demand (20%)
1980	53,300	190 gpc/day	11,300 A.F.	13,560
1985	59,400	193	12,800	15,360
1990	66,200	195	14,500	17,400
1995	73,800	198	16,400	19,680
2000	82,300	200	18,400	22,080
2005	91,800	203	20,900	25,080

Source: Santa Fe City Planning Department Water Demand Projections, 1976.

Santa Fe water demand is also characterized by a summer peak. The ratio of maximum summer day use to average day use is 2 to 1. To meet this peak demand PNM now utilizes the Buckman well field. This is PNM's most costly source of water since the water must be pumped 14 miles to the city and lifted over 1,500 feet. During recent years PNM may utilize the Buckman well field for

only 30 days during the summer.²¹ When one considers that it cost over \$6 million to develop the Buckman well field, in addition to its high operating costs, this expansion of capacity to meet peak demand for 30 days a year is remarkable.²²

Pressures in Santa Fe on water pricing began to build in the early 1970s. The growing population's demand for water forced PNM to turn to the Buckman well field for additional water supplies. As mentioned previously, it was costly to develop these wells and costly to operate them because of the distance and elevation difference between the well field and Santa Fe. The Safe Drinking Water Act of 1971 required more expensive treatment of Santa Fe's surface water supplies, necessitating the construction of a \$5 million treatment plant. PNM began incurring a deficit from its Santa Fe water operations and in July, 1976 requested a water rate increase. Prior to this, water rates in Santa Fe had not changed since at least 1962.

Table 3 shows the water rate structure before November 4, 1976 when the requested rate increase went into effect. The rate structure in-

TABLE 3
SANTA FE CITY WATER RATES, MONTHLY
(before November 4, 1976)

Residential

Minimum bill (includes first 2,300 gallons)	\$2.40
First 3,000 gallons (less minimum)	1.05/1,000 gallons
Next 7,000 gallons	0.85/1,000 gallons
Next 30,000 gallons	0.73/1,000 gallons
Over 40,000 gallons	0.60/1,000 gallons

Commercial

Minimum bill (includes first 2,300 gallons)	\$3.50
First 3,000 gallons (less minimum)	1.05/1,000 gallons
Next 7,000 gallons	0.85/1,000 gallons
Next 30,000 gallons	0.73/1,000 gallons
Over 40,000 gallons	0.60/1,000 gallons

Source: General Water Service, Santa Fe, Schedule No. 5, Public Service Company of New Mexico.

cluded a fixed minimum amount, which included the first 2,300 gallons of water consumption and a slight residential/commercial differential, and a declining block rate. As water usage increased, the price per 1,000 gallons decreased. On November 4, 1976 PNM implemented a rate increase which was in effect only seven months until May 31, 1977. See Table 4. This rate change raised the

TABLE 4
SANTA FE WATER RATES, MONTHLY
(November 4, 1976—May 31, 1977)

<i>Meter or Service Diameter Size</i>	<i>Residential Minimum Charge*</i>	<i>Commercial Minimum Charge*</i>
5/8"	\$ 2.96	\$ 4.32
3/4"	3.70	4.92
1"	6.17	6.17
1 1/2"	9.25	9.25
2"	12.33	12.33
3"	15.42	15.42
4"	18.50	18.50
6"	37.00	37.00
8"	61.66	61.66
Plus: First 3,000 gallons		\$1.29/1,000 gallons
Next 7,000 gallons		1.05/1,000 gallons
Next 30,000 gallons		0.90/1,000 gallons
Over 40,000 gallons		0.74/1,000 gallons

*Does not include any minimum usage.

Source: General Water Service, Santa Fe, Interim Schedule No. 5, Public Service Company of New Mexico.

fixed minimum charge for both residential and commercial customers, excluded the first 2,300 gallons of water use from the payment of the minimum charge, differentiated the minimum charge by diameter size of the hook-up, and raised the declining block rates for additional water consumption. However, the declining block rate structure was maintained.

On June 1, 1977 PNM again changed the rate structure. This rate change was more dramatic and innovative. The minimum system charge by diameter size of the hook-up and residential/commercial difference was maintained, as was the declining block rate. However, the water usage rate varied by season. It was approximately 20

percent higher during the summer season when the peak demand occurred. See Table 5. This was a recognition of the high marginal cost of operating the Buckman well field to meet the summer peak and an attempt to use price as a means to reduce consumption during this summer peak season. This new rate structure remained in effect until September 30, 1979. On October 1, 1979 PNM implemented new water rates. See Table 6. However, the major effect of these new rates was to raise substantially the summer water usage rates.

The effects of these water rate increases on the water bill of a typical household in Santa Fe are shown in Table 7. This assumes a winter usage of 6,100 gallons and a summer usage of 16,700 gallons. These figures do not represent an average bill because they assume no demand elasticity as

TABLE 5
SANTA FE WATER RATES, MONTHLY
(June 1, 1977—September 30, 1979)

Meter or Service Diameter Size	Residential System Charge *	Commercial System Charge *
5/8"	\$ 3.00	\$ 6.00
3/4"	3.00	6.00
1"	5.00	6.00
1 1/2"	7.00	7.00
2"	10.00	10.00
3"	18.50	18.50
4"	28.50	28.50
6"	57.50	57.50
8"	77.50	77.50

Plus:

Residential		
	Winter**	Summer**
First 5,000 gallons	\$1.49/1,000 gal.	\$1.79/1,000 gal.
Over 5,000 gallons	1.38/1,000 gal.	1.68/1,000 gal.
Commercial		
First 8,000 gallons	\$1.25/1,000 gal.	\$1.55/1,000 gal.
Over 8,000 gallons	1.15/1,000 gal.	1.43/1,000 gal.

* Does not include any minimum usage.

**Winter months are January, February, March, October, November and December; summer months are April, May, June, July, August and September.

Source: Residential and Commercial Water Service, Santa Fe, Schedule No. 5 and No. 7, respectively, Public Service Company of New Mexico.

the price of water was increased over this period. The level of these rate increases have been dramatic. Winter water rates have increased 110.43 percent since November 4, 1976; however, summer water rates have increased 242.56 percent. The latest increase in summer rates will not be felt by Santa Fe residents until April, 1980.

TABLE 6
SANTA FE WATER RATES, MONTHLY
(October 1, 1979 to present)

Meter or Service Diameter Size	Residential Minimum Charge *	Commercial Minimum Charge *
5/8"	\$ 3.00	\$ 6.00
3/4"	3.00	6.00
1"	9.00	9.00
1 1/2"	13.00	13.00
2"	18.50	18.50
3"	33.50	33.50
4"	52.00	52.00
6"	105.00	105.00
8"	141.00	141.00

Plus:

Residential		
	Winter**	Summer**
First 5,000 gallons	\$1.72/1,000 gal.	\$3.09/1,000 gal.
Over 5,000 gallons	1.37/1,000 gal.	2.73/1,000 gal.
Commercial		
First 8,000 gallons	\$2.20/1,000 gal.	\$2.61/1,000 gal.
Over 8,000 gallons	1.67/1,000 gal.	2.07/1,000 gal.

* Does not include any minimum usage.

**Winter months are January, February, March, October, November and December; summer months are April, May, June, July, August and September.

Source: Advice Notice No. 55, Public Service Company of New Mexico.

TABLE 7
TYPICAL RESIDENTIAL WATER BILL

	Winter	Summer
Pre-November 4, 1976	\$ 6.23	\$14.71
November 4, 1976-		
May 31, 1977	10.09	20.21
June 1, 1977-		
September 30, 1979	11.97	31.61
October 1, 1979 to present	13.11	50.39
% change	110.43%	242.56%

The impact of these water rate increases can also be seen on the level of peak water usage in Santa Fe. Peak summer water usage reached a maximum in 1974 at 16.4 million gallons per day and has declined every year since. In 1978 the peak demand was 11.7 million gallons per day—a 28.7 percent decrease.^{2,3} While all of this decrease in peak usage cannot be attributed to the water price increases (since no control for weather conditions between 1974 and 1978 is made), it certainly seems reasonable to assume that the dramatic price increases are having some impact on water usage. Remember too that the number of water customers was increasing during this period of declining peak usage.

PNM now estimates that the present water system capacity is good for 20 years or more until the year 2000. Compare that to the earlier estimate of 1985 by the Santa Fe City Planning Department (done in 1976 before the price increases) whose analysis assumed a continuation of the increasing trend in water usage rather than the actual decline experienced with the rate increases.

Albuquerque

Albuquerque's city water system is operated and managed by the city's Water Resources Department. The city's water supply comes exclusively from ground water sources and includes 18,700 acre feet of vested water rights and potentially 48,200 acre feet of San Juan-Chama Diversion water. Present peak water consumption in Albuquerque is 36,000 acre feet so that the city faces no immediate water supply problems.

However, Albuquerque has experienced continued rapid growth in population for many years. Table 8 displays the population for Albuquerque since 1930. Between 1930 and 1970 Albuquerque's city population increased a phenomenal 817.4 percent compared to overall state population growth of 142 percent. In 1977 Albuquerque's population was estimated at 291,187, a 19.5 percent increase since 1970.

Pressures on Albuquerque's water pricing have come from two primary sources. First of all, in order to accommodate the rapid increase in population, which is anticipated to continue, the city must expand the present capacity of the water

TABLE 8
ALBUQUERQUE AND NEW MEXICO POPULATION

Year	Albuquerque	New Mexico
1930	26,570	423,317
1940	35,449	531,818
1950	96,815	681,187
1960	201,200	954,000
1970	243,751	1,023,000
% increase	817.4%	142%

system. Albuquerque expects to double the value of the water distribution system in the next six years.^{2,4} This expansion will require additional borrowing by the city to finance the associated construction. Debt service of the Water Resources Department is expected to increase by 149 percent between FY 79 and FY 83.^{2,5} By city ordinance the surplus of water revenues minus system operating costs must be 133 percent of current debt service.^{2,6} This requirement, coupled with the increasing debt service of capacity expansion, will insure future water rate increases.

The second pressure on Albuquerque's water pricing has been PL92-500. This federal law requires that the maintenance and operation costs of any sewer treatment facilities financed with federal money under the Federal Water Pollution Control Act Amendments of 1972 must be recovered through sewer charges.^{2,7} Albuquerque has secured such financing for its new sewer treatment plant. However, until December, 1978 water and sewer charges to customers were combined. The city was required to determine whether its present sewer charges were adequate to recover the full cost of sewer operations.

In November, 1977 Albuquerque commissioned a study by Arthur Young and Company and Boyle Engineering Corporation to make this determination, as well as to recommend water rate changes in light of the need to increase water revenues. Their analysis found that water revenues were subsidizing sewer operations. In order to comply with PL92-500 the city would have to restructure both water and sewer rates.

In the area of water rates the Arthur Young/Boyle Engineering study recommended a rate structure which included a fixed minimum system

charge and two alternatives for water usage or commodity charges. The recommended fixed minimum system charge did not include any minimum usage of water and was differentiated with respect to meter size and four customer classes (residential, commercial, industrial and institutional) reflecting differing fixed costs in delivering water to those customers. The existing water rates at the time included a fixed charge but made no differentiation for customer class and included a minimum water usage. See Table 9.

Two alternatives for water usage charges were presented. One was a constant water use charge to all customers based on the assumption that there are few economies of scale associated with the variable costs of production and that the average cost equaled the marginal cost. The other alternative was a variable user charge based on the pressure zone of residence or business. This alternative was based on the recognition that customers living in higher elevation areas should bear the extra cost of pumping water to their pressure zone.

TABLE 9
ALBUQUERQUE WATER RATES
(January 1, 1977--December 1, 1978)

Meter Size	Fixed Charge	Minimum Water Usage Included in Fixed Charge
5/8"-3/4"	\$ 2.50	4 units
1"-1 1/4"	4.50	5
1 1/2"	9.75	10
2"	25.00	30
3"	42.00	48
4"	75.00	72
6"	125.00	92
8" or over	192.00	100

Water Usage or Commodity Charge

First 120 units—\$0.33/unit
Over 120 units—\$0.28/unit

Summer discount of 20 percent applies to water bill in excess of median water bill calculated for months of November through March; however, no discount applies to usage over 120 units or outside city limits.

Unit = 100 cubic feet

Source: Chapter 8, Article 5, Revised Ordinances of Albuquerque, New Mexico, Ordinance 10-1976, April 12, 1976.

The existing water rates at the time included a declining block rate structure and a summer gardening discount rate. The first 120 units (1 unit equals 100 cubic feet) cost \$0.33 per unit, while units over 120 cost only \$0.28 per unit. The summer discount was 20 percent applied to the water bill in excess of the median winter water bill. See Table 9.

On December 1, 1978 the city implemented a new water rate structure. They accepted the Arthur Young/Boyle Engineering report recommendation concerning the fixed system charges. Four customer classes were recognized and the minimum water usage was excluded. The city also implemented a constant water usage or commodity charge of \$0.31 per unit for all customers. See Table 10. The previous declining block rate structure was abandoned as was the summer gardening discount.

On December 1, 1979 an additional water rate change was implemented. This change affected principally summer water use.²⁸ During the months of April through November, water usage in excess of 250 percent of mean winter usage will be charged a \$0.20 surcharge, or \$0.51 per unit for all customers. See Table 11.

The new water rate structure in Albuquerque—particularly the water usage charges—reflected a

TABLE 10
ALBUQUERQUE WATER RATES
(December 1, 1978–November 30, 1979)

Meter Size	Fixed Monthly Charge			
	Residential	Commercial	Industrial	Institutional
3/4"	\$2.50	\$ 2.50	\$ 2.50	\$ 2.50
1"	4.50	4.50	4.50	4.50
1 1/4"	4.50	4.50	4.50	4.50
1 1/2"	9.75	9.75	9.75	9.75
2"	—	25.00	25.00	25.00
3"	—	42.00	42.00	42.00
4"	—	75.00	75.00	75.00
6"	—	125.00	125.00	125.00
8" or over	—	192.00	192.00	192.00

Water Usage or Commodity Charge

\$0.31 per unit (unit equals 100 cubic feet)
for all customers.

Source: Council Bill No. F/S 0-81, City of Albuquerque.

TABLE 11
ALBUQUERQUE WATER RATES
(December 1, 1979 to Present)

Meter Size	Fixed Monthly Charge			
	Residential	Commercial	Industrial	Institutional
3/4"	\$2.50	\$ 2.50	\$ 2.50	\$ 2.50
1"	4.50	4.50	4.50	4.50
1 1/4"	4.50	4.50	4.50	4.50
1 1/2"	9.75	9.75	9.75	9.75
2"	—	25.00	25.00	25.00
3"	—	54.63	58.55	65.35
4"	—	84.75	90.83	101.38
6"	—	140.89	151.00	168.53
8" or over	—	304.41	326.41	364.50

Water Usage or Commodity Charge

*Winter**: \$0.31 per unit (unit equals 100 cubic feet) for all customers.

*Summer**: \$0.31 per unit for usage ≤ 250 percent mean winter usage.

\$0.51 per unit for usage exceeding 250 percent mean winter usage for all customers.

*Winter months are December, January, February and March.

Source: Council Bill F/S 0-81, City of Albuquerque.

growing awareness of the impact of water pricing on water use, peak water use and the need for costly capacity expansion. The old declining block rate and the summer gardening discount encouraged excess water use, particularly during the summer peak. Since water system capacity must be built to meet peak day demand, this price structure was clearly disadvantageous. Also, peak water use forced the city to pump water from deeper depths and from inefficient wells necessitating higher electric utility charges and operating costs. The cost of peak water use was clearly higher than average. Yet the old water price structure charged a lower price for its use. The new water rates, which will not have an impact until the summer of 1980, should go far towards restraining peak water demand and hence the need for capacity expansion. Also, peak water users will be paying closer to the true operating costs of delivering water during peak periods.

One additional change in water pricing policy was also made in December, 1978. Prior to this, Albuquerque levied no water utility hook-up

charge to new customers. The cost of new capacity which enabled these new hook-ups was borne by all customers. In December, 1978 Albuquerque implemented a utility expansion charge to be paid at the time of meter sale for each connection to the water system. All monies collected through the imposition of the utility expansion charge are used to retire bonds sold to finance expansion of Albuquerque's water system.²⁹ This has the effect of placing more of the cost of adding extra capacity on the new user. Table 12 presents the current expansion charges.

TABLE 12
UTILITY EXPANSION CHARGE

Water Meter Size	Water Service Charge
3/4"	\$ 400
1"	500
1 1/4"	600
1 1/2"	1,250
2"	3,400
3"	10,575
4"	16,400
6"	27,250
8 1/2"	58,900

One final action by the city Water Resources Department should be noted. During the summer of 1979 the city implemented a voluntary water even/odd program. Residences with even street numbers were encouraged to water only on even numbered days; residences with odd street numbers on odd numbered days. This was an attempt to reduce peak water demand during the summer months and to save energy.

In FY 79, 47.4 percent of the total operating costs of the Water Resources Department were electric utility costs for pumping water. And the deeper the city must pump from its wells, the higher the utility bill. During peak demand periods the city is forced to pump from deep or inefficient wells. By attempting to reduce the peak demand by a water even/water odd program, the city would save utility costs and energy and reduce the marginal cost of providing water. The success of the program is uncertain. Peak day demand did fall in 1979 to 142 million gallons from 157 million in 1978. However, 1979 was a

wet year and all of the decline cannot be attributed to the water even/water odd program.

Because utility charges are such a large portion of the operating costs of the city's water system, the water department is also pursuing a time of day pricing system with the Public Service Company of New Mexico (PNM). Under such a plan PNM would charge the city lower electric rates during non-peak hours (during the night); at this time the city would pump water from its wells in excess of needs and store it in a reservoir for use during peak water demand periods. Obviously, the trade-off between reservoir storage costs and lower electric utility charges must be determined. It is being actively pursued and represents an innovative scheme between two utilities both with peak pricing and capacity problems.

Belen

The city of Belen was incorporated in 1918 and had a 1977 population estimated at 6,023. Belen is located 30 miles south of Albuquerque along the Rio Grande. The source of Belen water is four wells, three with a production capacity of 750 gallons per minute and one with a capacity of 150 gallons per minute. The latter is used as an emergency standby well.³⁰ The city also has two water supply tanks for storage. In July, 1977, Belen expanded their water supply capacity almost two times with the construction of a new well and storage tank. City water policy is the responsibility of five elected city council members.

Belen has not experienced the rapid growth in population as was the case with Albuquerque and Santa Fe. Table 13 displays Belen's population since 1930. While the state's population as a whole grew 142 percent from 1930-1970, Belen's population increased only 127.9 percent.

TABLE 13
POPULATION OF BELEN, NEW MEXICO
1930-1970

<i>Year</i>	<i>Belen</i>	<i>New Mexico</i>
1930	2,116	423,317
1940	3,038	531,818
1950	4,495	681,187
1960	5,031	954,000
1970	4,823	1,023,000
% change	127.9%	142%

This should be compared also to the 817 percent and 268 percent population increases experienced by Albuquerque and Santa Fe, respectively. Thus, the pressures on the water supply and the institutions which govern urban water in Belen are not of the same magnitude as in Albuquerque or Santa Fe.

According to the Belen city manager, Belen is experiencing no present water supply constraints and city water capacity is adequate to meet the city's need for the next 25 years at present rates of growth.³¹ During the 1960-1970 period water rates increased by approximately 20 percent. Between 1970 and 1979 there were no increases in water rates. In the summer of 1979 Belen raised water rates. However, this was an effort to avoid municipal insolvency. The city's general operating fund as of January 31, 1979 was operating at a \$82,000 deficit, including a \$8,200 deficit in the water department. The New Mexico Department of Finance and Administration advised the city that water, sewer and garbage collection rates should be raised. The water rate increase in 1979 was motivated more by general fiscal considerations than by actual water capacity or supply conditions.

While the water rates were increased, there was no change in the basic water rate structure. The water rate structure in Belen is a fixed amount (including the first 3,000 gallons of water usage) plus a water commodity charge for usage over 3,000 gallons which is of the declining block rate type. That is, the charge per gallon for additional gallons declines in the winter with increasing amounts of water consumed. There is a *lower* constant summer rate to encourage watering of lawns and gardens. There is also no differential between customer classes such as residential, commercial and industrial water users.

This rate structure is illustrated in Table 14. The present rate structure encourages excessive water usage by charging a lower price for high volume water use. The peak demand for water in Belen occurs during the summer months. Yet the rate structure has no economic incentive to reduce water usage during the peak period. On the contrary, summer water rates are actually lower than winter rates. It should be noted, however, that the recent water rate increase was felt most

heavily in the summer. The water commodity charge in the summer increased 36 percent. In the winter the increase was higher for high volume water users; it was only a 6 percent increase for usage under 10,000 gallons, but 22 percent for usage over 10,000 gallons.

TABLE 14
BELEN WATER RATE STRUCTURE (WITHIN CITY)

Gallons	Before March 5, 1979	
	Winter	Summer
First 3,000 (fixed)	\$4.50	\$4.50
3,001-10,000	0.60/1,000 gals.	0.33/1,000 gals.
10,001 and over	0.45/1,000 gals.	0.33/1,000 gals.
Gallons	After March 5, 1979	
	Winter	Summer
First 3,000 (fixed)	\$5.50	\$5.50
3,001-10,000	0.66/1,000 gals.	0.45/1,000 gals.
10,001 and over	0.55/1,000 gals.	0.45/1,000 gals.

Source: Water Department, City of Belen, Ordinance No. 380.

Unlike Albuquerque and Santa Fe, Belen is not now facing water supply/capacity constraints. Capacity is adequate for the next 25 years given the expected rate of water demand growth. Thus, there is no pressure on the city to discourage peak water usage or water demand in general by modifying the water pricing structure. Belen's water rate structure of declining block rates and lower summer rates have traditionally been in place in most Southwestern cities. It is only when these cities are faced with costly capacity expansion, as is the case with Albuquerque and Santa Fe, that the pricing structure is used to reduce water consumption.

Los Lunas

The village of Los Lunas was incorporated in 1928 and had a 1977 population of 1,280. Los Lunas is situated along the Rio Grande approximately 20 miles south of Albuquerque. The source of the village's water is groundwater. It owns three wells which can provide up to 1.7 million gallons of water per day. Los Lunas also has two water tanks for storage, with a combined capacity of 515,000 gallons.

The growth in Los Lunas' population has also been less than that experienced by the state as a

whole. Table 15 presents these data. Between 1930 and 1970 the village grew only 89.6 percent compared to the state's 142 percent. Population in 1977 was approximately 31.5 percent above 1970 levels indicating some significant population increases in the 1970s.

TABLE 15
POPULATION OF LOS LUNAS
1930-1970

Year	Los Lunas	State
1930	513	423,317
1940	686	531,818
1950	889	681,187
1960	1,186	954,000
1970	973	1,023,000
% change 1930-1970	89.6%	142%

According to the Los Lunas City Clerk,³² the village had water rights in 1978 to 181,332,000 gallons per year plus 107,000,000 additional gallons per year (400 acre feet) leased from the San Juan-Chama Diversion Project. This gives the village a total water supply of 288,332,000 gallons per year. Water usage in 1978 was 170,000,000 gallons. Thus, the village faces no present shortage of water supplies. However, the number of gallons pumped in 1978 represented a 41.5 percent increase over 1977 reflecting a sizable increased demand for water. The city clerk expressed the fear that the future growth of the village might result in the need to obtain additional water rights. Strong growth was experienced in the last five years because of new housing developments and city annexation of surrounding areas. In fact, Los Lunas recently received approval from the U.S. Department of Housing and Urban Development of a Community Development Block Grant to construct an additional well.

Water rates in Los Lunas were last raised in 1977. The rate structure includes a fixed monthly charge, which is differentiated by some customer classes and which includes some minimum usage of water, and a constant water usage or commodity charge to all customer classes of \$0.50 for water consumed above the minimum. Table 16 displays the water rate structure for Los Lunas.

This rate structure with its constant water usage charge (after the minimum usage) does not

make water cheaper as usage increases. Unlike the declining block rate then, it does not encourage excess water usage. Nor does Los Lunas price water more cheaply during the summer peak season, as Belen does. This basic rate structure has been in effect since at least 1960, although the minimum fixed charge has been raised several times since then.

For the moment the water supply situation in Los Lunas is stable. Adequate water supply and capacity exists. However, village officials are concerned about the recent increase in the village's population and water service area. The village was able to expand pumping capacity by means of a federal grant. Future water demand may put pressure on the village water department to acquire costly water rights and to make costly capacity expansion. At that time the village should consider using water pricing (e.g., winter/summer differential, increasing block rates) as a means to control demand for water and to forestall the need to provide costly water system expansion.

Concluding Remark: Belen and Los Lunas

Officials of both Belen and Los Lunas expressed the concern that their ability to raise water prices in the future was constrained. They believed that

if the city or village raised water prices high enough, residents would merely switch to alternative means of obtaining water at lower cost, i.e., drilling private wells. New Mexico water law allows an individual to drill one well for domestic usage, and the water table along the Rio Grande is shallow enough so that drilling would not be expensive.

We gathered some data to test this hypothesis and to determine at what level of water rates it would be economical to switch to private well water. By talking to several firms that specialize in domestic water well drilling, we obtained the following information:

Cost of tank and pump, including electric hook-up	\$800.00
Drilling costs, 4" hole with plastic casing at \$8.00/ft; for good water, average depth = 120 ft.	960.00
Average monthly electric cost to operate pump	\$3.00/mo.

We were told that a water pump has a service life of about seven years. The \$800.00 cost of the pump and tank was then amortized over seven years at a 9 percent rate of interest, yielding a required payment of \$158.95 per year or \$13.25

TABLE 16
WATER RATE STRUCTURE, LOS LUNAS, NEW MEXICO
1977 to Present

	<i>Fixed Charge</i>	<i>Commodity Charge</i>
Residential, Commercial, Apartments	\$ 5.25 (includes 1st 3,000 gals.)	\$0.50/1,000 gals.
Special Accounts County Court House	50.00 (includes 1st 3,000 gals.)	0.50/1,000 gals.
Laundry Commercial Establishments	5.00 (includes 1st 100,000 gals.)	0.50/1,000 gals.
Los Lunas Hospital and Training School	75.00	—
Los Lunas Consolidated Schools	5.25 per meter (includes 1st 3,000 gals.)	0.50/1,000 gals.

Source: Los Lunas, Water Rate Department.

per month. The drilling costs were assumed to be a one-time cost and were amortized over 30 years at a 9 percent rate of interest, yielding a required payment of \$93.44 per year or \$7.79 per month. The monthly costs of a private well were estimated than as \$24.04:

Tank and pump	\$13.25
Drilling	7.79
Electric operating cost	3.00
	<u>\$24.04</u>

This compares to an average city water bill in Belen of \$7.48 in the winter (assuming 6,000 gallons used) and \$8.65 in the summer (assuming 10,000 gallons used); in Los Lunas, city water bills for comparable water usage would be \$6.75 in winter and \$8.75 in summer. Thus, current city water rates would have to be raised by more than three times before it would be economical for a resident of Belen or Los Lunas to switch to private well water.

Conclusions

Urban water institutions today are facing a fast changing environment to which they must adapt. This changing environment is characterized by rapid increases in the demand for water arising from expanding population and service areas, fully appropriated water basins implying water supply constraints, sharply rising costs associated with expanding water distribution capacity, and federal environmental regulations which impose additional costs and even new water pricing structures on the water system. It is argued here that one mechanism for dealing with this changing environment is the more efficient use of urban water by means of urban water pricing policy.

Four New Mexico cities were taken as case studies. The social and economic pressures on the urban water institutions in these cities were outlined and the adaptation to these pressures via the water pricing mechanism examined. Both Albuquerque and Santa Fe face to some degree all the pressures outlined above. Both cities also have had dramatic shifts in their urban water pricing policy, which in most cases represented a change in the direction of more efficient use of water. On the other hand, both Belen and Los Lunas are not now experiencing these changing social and eco-

nomie pressures. While water rates in Belen and Los Lunas may have risen in recent years, these increases do not reflect the same dramatic shift in urban water pricing policy. Thus, to a limited extent it can be said that urban water institutions do adapt to their changing environment.

Santa Fe's demand for water in the 1960s was fast approaching the point where it would outstrip water supply and the capacity to deliver it. A new source of groundwater was developed in the Buckman well field along the Rio Grande. However, this source was 14 miles from the city and at a 1,500 foot lower elevation than the city. To develop, pump, and deliver this extra water supply to Santa Fe was very expensive, and this water is now used only during the summer peak demand period. Santa Fe also was required to build an expensive water treatment facility for its surface water supplies in order to comply with the Safe Drinking Water Act of 1971. Faced with the rising cost of treating and delivering water, water rates had to be raised. However, water rates alone were not just raised; there was also a change in rate structure. Santa Fe moved away from a declining block rate structure for all seasons to one with a winter/summer rate differential. Summer rates are now substantially higher than winter rates. It is during the summer months that water use reaches a peak, and capacity must be built to meet peak water demand. The higher summer rates, as many water demand elasticity studies have shown, will discourage water demand and reduce peak demand. The higher summer rates also recognize that the marginal cost of delivering water in the summer is higher than in winter because in addition to operating costs there are the extra costs of added capacity to meet an expanding peak. Thus, the summer/winter rate differential represents a major shift in water pricing policy in the direction of efficient water use. However, Santa Fe still maintains a declining block rate structure within the summer and winter water commodity charges. This serves only to make water cheaper with increasing use, and hence encourages excess (inefficient) water use.

Albuquerque has experienced rapid population growth in the past, and this growth is expected to continue into the future. Population growth brings with it increased demand for urban water

and expanding service areas. Hence, Albuquerque is faced with doubling the value of its existing water supply system over the next five years to accommodate anticipated growth. Albuquerque's water rate policy was also affected by PL92-500 which requires that the city separately account for sewer and water costs and revenues.

In response to these social and economic pressures Albuquerque has also changed its water pricing policy. Rates have been raised, and the rate structure itself altered. Albuquerque initially moved away from a declining block rate structure to a constant rate structure. Then in December, 1979 Albuquerque's water rates imposed a summer/winter differential where summer water usage after a point is subject to a 64.5 percent surcharge. This new water rate structure is now more akin to an increasing block rate type. Water use in the summer will be more expensive, and this should discourage water demand during the peak usage season. This should go far to reducing the

ultimate capacity expansion that Albuquerque might have required in the absence of a change in water pricing policy. Thus, water efficiency in Albuquerque is being promoted through urban water pricing.

Neither Belen nor Los Lunas has experienced the significant social and economic environment pressures that Albuquerque and Santa Fe have. And because of this, the impetus to make dramatic shifts in water pricing policy has been absent. Water rates have increased to keep up with inflationary cost increases and, in Belen, because of general fiscal conditions. Belen, however, still maintains a declining block rate structure and a summer discount to encourage green lawns and gardens. Los Lunas has a constant block rate and no summer/winter differential. In other words, neither Belen nor Los Lunas has undertaken dramatic changes in water pricing policy in the direction of more efficient water use.

FOOTNOTES

1. Dean E. Mann, "The Impact of Institutional Arrangements on Water Conservation Practices in the West: A Policy Analyses," Department of Political Science, University of California, Santa Barbara, mimeo, October, 1979, p. 1.
2. Besides a fixed and fully appropriated water supply, there are other forces acting on urban water pricing, e.g., the economics of urban water distribution, federal environmental regulations, and competing water users such as energy development, Indians, and the Federal Government through reserved rights. These will be discussed at a later point.
3. Rahman Khoshakhlagh, F. Lee Brown and Charles DuMars, *Forecasting Future Market Values of Water Rights in New Mexico*, New Mexico Water Resources Research Institute Final Report, Project No. 3109-209, July, 1977.
4. *Ibid.*, p. 101-102, Tables 5.5 and 5.6.
5. Fort Collins, Colorado, Code § 112-66. Grant of water rights required.
6. *Vision of Balance—A City Ecosystem*, Westminster, Colorado.
7. See, for example, *The Colorado Water Study: Directions for the Future*, Office of the Executive Director, Colorado Department of Natural Resources, Denver, Colorado, October, 1978.
8. John Tysseling, *An Institutional Analyses of Water Rights Markets*, unpublished M.A. Thesis, University of New Mexico, December, 1979.
9. Edwin Mansfield, *Microeconomics: Theory and Application*, W. W. Norton and Company, New York, 3rd edition, Chapter 10.
10. Metering is not always necessary where the charge to each user is a flat rate rather than a charge based upon water actually used.
11. Conversation with Michael Slota, Water Rate Specialist, Public Service Company of New Mexico, Santa Fe, November 13, 1979.
12. Arthur Young & Company and Boyle Engineering Corp., *Special Draft Summary Report to City of Albuquerque*, May 11, 1978.
13. Charles W. Howe and F. P. Linaweaver, Jr., "The Impact of Price on Residential Water Demand and Its Relation to System Design and Price Structure," *Water Resources Research*, III, No. 1, 1967.
14. Steve H. Hanke, "Demand for Water Under Dynamic Conditions," *Water Resources Research*, VI, No. 3, 1970.
15. Conversations with Ms. Michelle Hymel, Senior Rate Analyst, Public Service Co. of New Mexico, November 16, 1979.
16. See, for example, Steve H. Hanke and Robert K.

- Davis, "Demand Management Through Responsive Pricing," *Journal of the American Water Works Association*, LXIII, No. 9, 1971.
17. For a more extensive discussion of attitudes toward water use in Albuquerque see Peter A. Lupsha, Don P. Schlegel, and Robert U. Anderson, *Rain Dance Doesn't Work Here Anymore*, Division of Government Research, Institute For Applied Research Services, University of New Mexico, Albuquerque, New Mexico, December, 1975.
18. Arthur J. Young & Company and Boyle Engineering, *op. cit.*
19. Dr. Lee Wilson, Testimony before the New Mexico Public Service Commission, April 4, 1977.
20. It is unclear just who owns the water rights, i.e., the City or PNM. This matter is presently before the New Mexico Supreme Court.
21. Conversation with Mr. Michael Slota, Water Rate Specialist, Public Service Company of New Mexico, Santa Fe, New Mexico, November 13, 1979.
22. It should also be remembered that water from Buckman first became available in 1972. Since then price increases have dramatically reduced peak demand in Santa Fe and hence the need for this source of supply.
23. Conversation with Michael Slota, Water Rate Specialist, Public Service Company of New Mexico, November 13, 1979.
24. Conversation with Mr. James Gill, Water Resources Department, City of Albuquerque, September 5, 1979.
25. Arthur Young & Company and Boyle Engineering Corporation, *op. cit.*, Table II-10.
26. Council Bill No. F/S 0-81, Section 2, C.
27. PL92-500, Section 204 of Federal Water Pollution Control Act of 1972: each user must pay its "proportionate share of the costs of operation and maintenance, including replacement of waste treatment."
28. The level of the fixed system charge was raised for some nonresidential customers with larger meter sizes.
29. Council Bill No. F/S 0-81, City of Albuquerque, Section 5, p. 23.
30. Micha Gisser, *et. al.*, *AGUA Financial Analysis*, report prepared for U.S. Corps of Engineers, Albuquerque District, July, 1978.
31. Conversation with Mr. Richard Aragon, Belen City Manager, Spring, 1979.
32. Conversation with Mr. Augustine Archuleta, City Clerk, Los Lunas, New Mexico, Spring, 1979.

ERRATA

April 1980 *New Mexico Business*

"Current Economic Developments in New Mexico," page 30, column 2

—line 2 should read: "... with 1979 growth levels, ..."

—line 7 should read: "The economic slowdown at the national ..."

Current Economic Developments in New Mexico

MONTHLY SUMMARY

LEO W. CARBAJAL

It appears as though the current national recession may be more severe and extend over a longer period of time than previously forecast by government officials and many economists. The index of leading economic indicators published by the Commerce Department fell 4.8 percent in April, representing the largest one month decline in the index since its inception in 1948. In May, the nation's unemployment rate rose by eight-tenths of a percentage point, leaving 7.8 percent of the labor force unemployed. Recent layoffs involving thousands of workers in manufacturing industries such as automobile production have largely been the result of increased interest rates and the lessened availability of credit which have acted to dampen consumer and business spending. Activity and employment in the housing industry have also been adversely affected by the tight credit policy which the federal government adopted in March of this year in an attempt to control inflation.

Aggregate economic activity in New Mexico in March, 1980 registered mixed results. Total employment (SA) showed virtually no change from February to March. However, the number of persons unemployed in the state fell 3.6 percent (SA) during the same period. Despite this one month drop in unemployment, a comparison of year-to-year figures shows that unemployment in New Mexico in March of this year was 14.3 percent (SA) higher than in March, 1979. Coinciding with the March decline in the number of unemployed persons was the state's unemployment rate which fell slightly from 7.0 percent (SA) in February to 6.8 percent (SA) in March. An indi-

cation which could point to higher unemployment in the near future is the number of new unemployment insurance claims which rose 23.2 percent (SA) from February to March and stood 28.0 percent (SA) above the total for March, 1979.

One sector of the New Mexico economy which has obviously felt the effects of the national recession is the construction industry. For example, residential building permits declined 52.0 percent (SA) in March, representing a decrease of 72.7 percent (SA) from the number recorded one year ago. Residential construction contracts also fell 44.0 percent (SA) in March. In contrast, non-residential and nonbuilding construction contracts rose 13.7 and 72.2 percent, respectively.

The number of manufacturing jobs fell 1.1 percent (SA) in March while employment in Retail and Wholesale Trade remained relatively stable. Number of jobs in the Transportation, Communication, and Utilities sector also showed little change.

Activity in the financial sector also demonstrated mixed results. Bank debits were down in March compared to the corresponding total for February. On the other hand, new bank loans increased 7.2 percent (SA). Bank demand deposits increased in March by 3.4 percent while bank time deposits rose 1.6 percent during the same period.

Coal production in New Mexico increased 10.1 percent in March and was 3.6 percent above the total recorded for the same month last year. The production of copper ore led all components of

(continued on page 29)

ECONOMIC INDICATORS

	Quarterly Averages			
	Second Quarter	1979 Third Quarter	Fourth Quarter	1980 First Quarter
1. GENERAL				
Civilian Labor Force ¹ (000)	536.3	545.3	546.9	541.9
Seasonally Adjusted*	533.6	536.1	545.0	556.3
Total Employment ¹ (000)	501.1	510.9	511.5	500.1
Seasonally Adjusted*	498.3	500.9	509.0	516.3
Unemployment ¹ (000)	35.1	34.4	35.4	41.8
Seasonally Adjusted*	35.3	35.2	36.0	40.1
Unemployment Rate (5)	6.5	6.3	6.5	7.7
Seasonally Adjusted*	6.6	6.6	6.6	7.2
Weekly New Unemployment Insurance Claims	1,171.7	1,114.0	1,362.7	1,524.0
Seasonally Adjusted*	1,283.0	1,220.3	1,318.7	1,354.9
Nonagricultural Wage/Salary Employment ² (000)	461.7	467.0	470.6	466.4
Seasonally Adjusted*	459.1	462.0	469.6	475.5
New Business Incorporations	240.7	243.3	298.0	na
Business Failure Liabilities (000)	0.0	0.0	na	na
2. AGRICULTURAL RECEIPTS				
From Livestock and Products (\$ mil.)	48.4	49.1	136.4	na
Seasonally Adjusted*	66.8	75.3	66.4	na
From Crops (\$ mil.)	10.6	17.0	40.2	na
Seasonally Adjusted*	16.9	19.1	22.4	na
3. MINING PRODUCTION				
Petroleum (000 bbls.)	6,578.6	6,663.3	6,763.7	6,486.9
Natural Gas (bil. cu. ft.)	95.4	94.7	99.5	97.3
Seasonally Adjusted*	96.3	97.4	97.3	96.1
Copper Ore (000 tons)	16.6	15.8	15.0	14.0
Coal Production (000 short tons)	978.3	944.0	1,023.0	1,220.7
4. CONSTRUCTION				
Residential Building Permits (\$ mil.)	30.1	25.7	13.7	12.6
Seasonally Adjusted*	26.5	25.8	16.7	13.1
Residential Construction Contracts (\$ mil.)	48.8	40.5	37.1	31.2
Seasonally Adjusted*	44.5	39.0	40.7	32.9
Nonresidential Construction Contracts (\$ mil.)	26.0	28.5	35.1	21.5
Nonbuilding Construction Contracts (\$ mil.)	15.3	26.3	16.6	14.6
5. MANUFACTURING				
Employment ² (000)	34.7	35.0	35.5	35.1
Seasonally Adjusted*	34.8	34.6	35.0	35.8
Average Weekly Hours	39.5	39.3	40.0	39.8
Seasonally Adjusted*	39.7	39.6	39.6	39.9

ECONOMIC INDICATORS (continued)

1980			Percentage Change				Percentage Change		
January	February	March	II 1978- II 1979	III 1978- III 1979	IV 1978- IV 1979	I 1979- I 1980	Jan. 1979- Jan. 1980	Feb. 1979- Feb. 1980	Mar. 1979- Mar. 1980
541.4	540.8	543.4	1.7	1.2	2.5	4.3	4.8	4.2	3.9
559.0	555.7	554.2	1.8	1.2	2.5	4.2	4.7	4.1	3.9
495.5	499.9	504.9	0.6	0.3	1.6	3.2	3.1	3.3	3.2
515.1	517.0	516.8	0.6	0.2	1.7	3.2	3.1	3.3	3.2
45.9	40.9	38.5	20.6	17.7	16.6	19.1	27.5	15.5	13.9
44.0	38.8	37.4	20.7	17.5	16.5	19.3	27.4	15.8	14.3
8.5	7.6	7.1	18.1	16.7	13.5	14.2	21.4	11.8	9.2
7.9	7.0	6.8	18.7	16.3	13.6	14.5	21.6	11.3	10.1
1,804.0	1,410.0	1,358.0	0.7	- 2.6	4.6	6.1	3.3	- 5.6	27.3
1,309.1	1,234.7	1,520.7	- 0.1	- 3.2	4.8	8.1	3.6	- 5.5	28.0
462.9	466.7	469.7	4.0	3.1	3.8	4.4	4.7	4.7	3.9
474.8	476.2	475.4	4.0	3.0	3.8	4.5	4.8	4.7	3.9
220.0	na	na	9.4	- 4.3	47.8	na	5.8	na	na
na	na	na	0.0	0.0	NA	na	na	na	na
na	na	na	14.4	6.3	7.9	na	na	na	na
na	na	na	14.6	7.9	3.2	na	na	na	na
na	na	na	- 5.8	29.1	11.9	na	na	na	na
na	na	na	- 9.3	28.9	13.3	na	na	na	na
6,680.9	6,215.4	6,564.4	- 5.8	- 3.5	- 0.9	0.5	2.0	2.0	- 2.3
100.6	92.8	98.4	1.1	0.8	1.6	1.6	1.5	2.1	1.3
96.8	96.0	95.4	1.0	0.8	1.7	1.7	1.6	2.2	1.3
14.3	12.7	15.1	47.1	49.7	25.7	1.8	15.3	- 1.6	- 5.8
1,342.0	1,104.0	1,216.0	- 0.4	- 12.9	- 2.8	17.6	25.8	26.3	3.6
14.7	13.4	9.8	- 1.0	- 11.1	- 33.9	- 49.1	- 20.9	- 33.8	- 72.5
16.9	15.2	7.3	- 0.6	- 11.8	- 31.9	- 44.4	- 21.2	- 33.1	- 72.7
40.3	29.9	23.4	9.7	- 6.1	6.8	- 26.3	11.3	- 27.9	- 52.6
44.5	34.8	19.5	10.0	- 5.8	2.7	- 23.5	11.2	- 27.4	- 52.7
19.3	21.1	24.0	84.6	64.1	40.1	32.9	- 24.0	129.4	73.4
9.9	12.3	21.7	- 58.4	6.6	- 1.4	- 12.2	- 22.3	- 62.6	391.0
35.1	35.1	35.1	3.4	2.8	3.7	4.4	4.2	6.0	2.9
35.8	36.0	35.6	5.4	2.9	3.7	4.3	4.0	6.1	2.8
40.4	39.4	39.6	0.7	2.2	2.6	1.1	3.6	1.8	- 2.0
40.6	39.5	39.4	0.7	2.2	2.6	1.1	3.6	1.7	- 2.1

ECONOMIC INDICATORS (continued)

	Quarterly Averages			
	Second Quarter	1979 Third Quarter	Fourth Quarter	1980 First Quarter
6. <u>TRANSPORT./COMMUNIC./UTIL.</u>				
Employment	27.8	28.2	29.1	28.4
7. <u>TRADE</u>				
Wholesale Employment ² (000)	21.2	21.6	22.0	22.1
Retail Employment ² (000)	82.5	84.3	85.0	83.0
Seasonally Adjusted*	82.4	82.6	84.4	85.7
Average Weekly Hours	35.3	35.8	35.2	34.2
8. <u>FINANCE</u>				
Bank Debits (\$mil.)	10,958.6	8,518.1	9,140.7	12,062.5
Seasonally Adjusted*	10,356.5	8,419.6	9,791.3	11,987.9
New Bank Loans (\$ mil.)	255.7	268.1	260.6	267.6
Seasonally Adjusted*	257.9	276.8	246.8	272.9
Bank Demand Deposits (\$ mil.)	1,045.3	1,036.4	1,057.3	976.0
Bank Time Deposits (\$ mil.)	1,780.1	1,835.0	1,875.2	1,897.8
Total Savings Deposits (Savings and Loan Assoc.) (\$ mil.)	1,814.3	1,852.8	1,925.5	na
New Savings and Loans Received (\$ mil.)	115.4	148.1	146.8	na
9. <u>SERVICES AND TOURISM</u>				
Service Employment ² (000)	89.0	92.0	88.7	90.2
Seasonally Adjusted*	88.2	88.8	90.1	93.0
Lodging Employment ² (000)	9.4	9.6	8.8	8.7
Seasonally Adjusted*	9.3	8.8	9.2	9.3
Visits to National Parks/Monuments (000)	201.4	251.2	74.4	74.3
Seasonally Adjusted*	165.9	148.1	139.9	142.0
10. <u>GOVERNMENT</u>				
Federal Employment ² (000)	36.6	37.9	37.0	36.7
State Employment ² (000)	33.5	32.0	35.8	35.3
City and County Employment (000)	51.4	48.1	51.8	52.6

* Seasonally adjusted figures are economic time series which have had seasonal variations removed with statistical processes. These purely seasonal variations include the effects of: the opening and closing of school, the annual pattern of seasons (especially applicable to agricultural data), holidays, and other annually recurring events which influence economic activity. By removing these seasonal variations from raw economic data, month-to-month analysis of trends and unusual fluctuations in economic activity is facilitated.

na Not available.

NA Not applicable, i.e., first quarter 1978 equals zero.

1 Number of persons by place of residence

2 Number of jobs by place of work.

ECONOMIC INDICATORS (continued)

			Percentage Change				Percentage Change		
1980			II 1978-	III 1978-	IV 1978-	I 1979-	Jan. 1979-	Feb. 1979-	Mar. 1979-
January	February	March	II 1979	III 1979	IV 1979	I 1980	Jan. 1980	Feb. 1980	Mar. 1980
28.4	28.3	28.4	6.1	5.7	5.1	3.3	3.7	3.3	2.9
21.9	22.1	22.2	6.5	4.9	6.3	6.0	5.8	6.3	5.7
83.7	82.5	82.8	1.5	1.6	2.9	2.8	3.0	2.9	2.6
86.1	85.5	85.4	1.5	1.7	3.0	2.8	3.0	2.9	2.6
33.8	34.4	34.5	- 1.1	- 1.3	- 1.0	- 0.9	- 1.2	- 0.3	- 1.1
13,315.6	12,433.1	10,438.8	272.7	158.3	163.4	104.1	163.8	104.7	57.9
13,002.5	12,804.0	10,157.2	271.3	154.1	162.1	102.6	166.9	94.1	61.6
298.9	231.7	272.3	1.3	11.0	- 2.6	13.9	21.5	11.5	8.4
296.9	251.8	270.0	1.2	11.7	- 4.1	13.7	23.9	6.5	10.8
949.0	972.9	1,006.0	3.7	- 1.1	- 0.2	1.3	- 1.2	1.5	3.6
1,857.7	1,902.3	1,933.4	12.5	12.3	11.7	10.2	9.7	11.1	9.8
1,963.5	1,978.8	na	14.7	12.1	12.4	na	11.5	11.5	na
212.5	147.5	na	26.1	51.1	45.2	na	35.9	58.1	na
98.5	90.8	91.3	1.9	0.8	0.7	6.1	6.0	6.3	6.0
91.8	93.7	93.6	1.9	0.9	0.6	6.2	6.1	6.3	6.0
8.6	8.7	8.9	1.5	- 4.3	- 2.6	- 1.6	- 3.4	- 1.1	0.0
9.2	9.3	9.3	1.4	- 4.3	- 2.6	- 1.5	- 3.3	- 1.3	- 0.1
51.2	59.9	111.8	3.4	- 6.9	- 5.8	- 22.0	22.7	- 12.1	- 36.5
138.7	128.7	158.6	8.2	- 6.9	- 3.1	- 18.2	19.7	- 17.6	- 36.2
36.8	36.6	36.6	3.9	5.5	3.4	3.5	4.6	3.1	2.8
33.4	36.1	36.4	6.8	2.0	5.5	4.8	3.4	5.3	5.5
51.8	52.8	53.2	2.2	0.1	3.6	3.7	3.6	3.7	3.7

Sources: New Mexico Employment Security Department: Sections 1, 5, 6, 7, 9, 10; Dun and Bradstreet, Inc.: Section 1; USDA Statistical Reporting Service: Section 2; Oil Conservation Commission: Section 3; New Mexico Bureau of Revenue: Section 3; Building Inspectors' reports, 18 cities: Section 4; F.W. Dodge Co. (a division of McGraw-Hill, Inc.): Section 4; Federal Power Commission: Section 6; Bank report (36): Section 8; Federal Home Loan Bank of Little Rock: Section 8; United States Department of the Interior, National Park Service: Section 9.

[Editor's Note: The Albuquerque Food Price Index is being discontinued for budgetary reasons. The last index collected and published will be for the month of April; it will appear in the June issue.]

ALBUQUERQUE FOOD PRICE INDEX: MARCH 1980
June 1974 = 100(all items)

	Mar. 80 Index	June 74 Mar. 80	% Change Mar. 79 Mar. 80	Feb. 80 Mar. 80
ALL FOOD ITEMS	161.1	61.1	7.8	3.8
Cereals and Baked Products	153.6	53.6	20.9	1.0
Meat, Fish, Poultry	171.5	71.5	3.1	1.2
Fruits and Vegetables	152.9	52.9	0.4	4.5
Dairy Products	143.7	43.7	9.6	0.5
Other Food Items	169.2	69.2	15.3	11.4

Food Items	Quantity	March 1980		% Change		
		Price	Index	June 74 Mar. 80	Mar. 79 Mar. 80	Feb. 80 Mar. 80
Flour, all purpose	5 lb	\$1.12	97.3	- 2.7	11.6	4.2
Corn flakes	12 oz	0.68	176.0	76.0	10.0	1.2
Bread, white	1b	0.56	158.3	58.3	29.3	0.0
Cookies, cream	16 oz	1.27	161.8	61.8	21.2	1.9
Hamburger	1b	1.68	194.5	94.5	5.5	1.1
Round steak, bone-in	1b	2.53	201.2	101.2	2.1	0.1
Sirloin steak, boneless	1b	3.03	175.1	75.1	6.1	1.3
Chuck roast, blade	1b	1.94	256.3	156.3	23.4	- 2.1
Beef liver	1b	1.27	135.6	35.6	34.1	5.5
Pork chops	1b	1.74	122.8	22.8	- 27.4	4.4
Bacon, sliced	1b	1.96	170.1	70.1	- 9.2	- 0.4
Pork roast, loin	1b	1.54	113.6	13.6	- 15.7	- 0.2
Frankfurters	1b	2.19	173.5	73.5	8.2	1.2
Fryers, whole	1b	0.64	128.8	28.8	- 8.6	1.1
Tuna, light chunk	6 oz	1.03	179.2	79.2	25.7	7.4
Bananas	1b	0.37	183.5	83.5	19.3	4.8
Oranges	Dozen	1.66	187.5	87.5	- 13.0	21.9
Lettuce	1b	0.46	106.7	6.7	21.1	16.1
Potatoes, except baking	10 lb	1.47	76.4	- 23.6	22.3	1.2
Tomatoes	1b	0.51	97.8	- 2.2	- 31.3	11.8
Carrots	1b	0.50	217.1	117.1	75.1	- 4.0
Onions, yellow	1b	0.21	148.5	48.5	- 28.3	7.0
Fruit cocktail	#303	0.64	171.5	71.5	6.1	- 9.1
Tomatoes, canned	#303	0.55	168.8	68.8	1.2	0.0
Peas, canned	#303	0.45	150.2	50.2	17.7	3.2
Frozen orange juice	6 oz	0.52	195.9	95.9	- 4.2	4.3
Frozen broccoli spears	10 oz	0.60	146.9	46.9	- 8.1	0.0
Milk	Quart	0.57	136.0	36.0	11.5	1.4
Evaporated milk	13 oz	0.47	160.8	60.8	7.9	- 1.7
Ice cream	1/2 gal	1.77	152.4	52.4	11.4	1.1
Cheese, sliced	6 oz	0.90	151.4	51.4	3.6	- 1.4
Eggs, AA large	Dozen	0.81	132.7	32.7	- 14.5	4.2
Margarine	1b	0.73	121.1	21.1	3.9	2.4
Sugar	5 lb	2.04	141.3	41.3	53.8	33.3
Coffee	1b	3.20	247.9	147.9	9.8	- 0.5
Instant coffee	6 oz	3.36	212.4	112.4	6.8	- 0.5
Cola drink	10 oz ctn	1.34	171.1	71.1	5.9	2.1
Chicken noodle soup	10 oz	0.32	140.0	40.0	10.2	1.3
Baby food, strained	4 oz	0.24	180.0	80.0	4.4	4.6
Frozen french fries	9 oz	0.57	264.7	164.7	106.6	77.5

VALUE OF BUILDING PERMITS--SELECTED CITIES

	Residential				Nonresidential			
	March 1979	March 1980	Cumulative Total Through March		March 1979	March 1980	Cumulative Total Through March	
			1979	1980			1979	1980
Alamogordo	\$ 743,500	\$ 54,500	\$ 2,399,000	\$ 820,137	\$ 144,199	\$ 1,900	\$ 280,499	\$ 282,800
Albuquerque	22,428,988	4,704,429	45,353,146	18,919,919	3,598,717	2,412,440	9,622,275	16,221,434
Artesia	324,500	81,000	422,500	548,000	805,850	110,000	814,600	343,500
Carlsbad	245,550	147,000	523,750	404,900	933,000	111,500	1,375,040	151,500
Clayton	35,000	0	129,488	0	5,000	0	5,000	0
Clovis	403,989	0	1,672,980	384,988	105,553	171,000	432,543	373,140
Deming	146,000	310,000	512,000	691,550	0	0	15,000	1,574,100
Farmington	1,422,334	872,879	2,397,409	2,395,226	819,773	306,088	1,611,139	1,067,271
Gallup	885,476	299,776	982,456	460,084	66,000	1,586,951	656,000	4,188,941
Grants	489,500	367,400	1,077,840	1,249,077	68,500	82,000	78,500	184,000
Hobbs	489,500	634,000	1,413,500	2,338,000	21,000	387,000	567,585	658,600
Las Cruces	3,103,822	517,168	7,368,853	3,695,046	218,200	951,000	737,154	2,239,303
Las Vegas	57,295	55,645	99,133	162,259	0	0	34,000	0
Lordsburg	10,500	40,000	55,500	40,000	0	0	73,500	132,000
Portales	282,700	0	612,500	124,892	0	0	440,300	450,000
Raton	144,685	19,035	164,125	37,755	34,000	0	34,000	0
Roswell	1,930,589	425,368	3,308,089	2,247,368	27,660	3,600	116,610	422,035
Santa Fe	2,314,756	1,167,040	5,755,546	3,229,155	90,000	1,171,972	1,283,000	3,769,373
Tucumcari	5,000	59,811	35,000	89,811	1,245,000	0	1,248,000	56,993
TOTAL	\$35,463,684	\$9,755,051	\$74,282,815	\$37,838,167	\$8,182,452	\$7,295,451	\$19,424,745	\$32,114,990

Source: Individual reports by city building inspectors.

ESTIMATED CIVILIAN LABOR FORCE AND EMPLOYMENT

	New Mexico			Albuquerque SMSA ¹		
	March 1979 ^r	February 1980 ^r	March 1980 ^p	March 1979 ^r	February 1980 ^r	March 1980 ^p
Total Civilian Labor Force	523,200	540,800	543,400	198,000	205,300	207,200
Employment ²	489,400	499,900	504,900	186,100	190,800	192,800
Unemployment	33,800	40,900	38,500	11,900	14,500	14,400
Percentage of Labor Force	6.5	7.6	7.1	6.0	7.1	6.9
Nonagricultural Wage and Salary Employment	452,000	466,700	470,500	184,200	189,800	191,000
Mining	25,800	27,900	28,300	na	na	na
Contract Construction	34,600	33,100	34,200	15,400	14,800	15,000
Manufacturing	34,100	35,100	35,200	17,600	18,500	18,500
Durable Goods	19,900	20,700	20,700	12,200	12,900	12,900
Nondurable Goods	14,200	14,400	14,500	5,400	5,600	5,600
Transportation and Public Utilities	27,600	28,300	28,400	11,100	11,800	11,900
Trade	101,700	104,600	104,900	46,000	47,200	47,100
Wholesale	21,000	22,100	22,200	12,700	13,400	13,400
Retail	80,700	82,500	82,700	33,300	33,800	33,700
Finance, Insurance and Real Estate	20,700	21,400	21,600	10,700	11,000	11,200
Services and Miscellaneous	86,100	90,800	91,700	41,600	43,500	43,900
Government	121,400	125,500	126,200	41,800	43,000	43,400
Federal	35,600	36,600	36,800	12,400	12,800	12,900
State	34,500	36,100	36,300	10,900	11,300	11,500
Local	51,300	52,800	53,100	18,500	18,900	19,000

p Preliminary.

r Revised.

¹ Albuquerque Standard Metropolitan Area includes Bernalillo and Sandoval Counties.² Includes labor disputes.

na Not available, under 50 jobs.

Source: New Mexico Employment Security Department.

NUMBER OF BUILDING PERMITS--SELECTED CITIES

	Residential				Nonresidential			
	March 1979	March 1980	Cumulative Total Through March		March 1979	March 1980	Cumulative Total Through March	
			1979	1980			1979	1980
Alamogordo	18	2	57	20	8	2	16	11
Albuquerque	496	81	921	318	21	19	50	70
Artesia	10	3	13	15	9	3	14	14
Carlsbad	8	3	14	9	2	3	8	4
Clayton	1	0	5	0	2	0	2	0
Clovis	17	0	62	15	7	3	16	6
Deming	5	7	16	19	0	0	1	1
Farmington	46	26	73	67	10	2	20	12
Gallup	17	5	19	8	4	3	6	6
Grants	12	8	30	25	4	1	5	3
Hobbs	12	15	33	49	1	5	5	9
Las Cruces	77	9	140	70	12	7	31	13
Las Vegas	2	2	4	5	0	0	1	0
Lordsburg	1	1	3	1	0	0	1	3
Portales	9	0	17	3	0	0	2	1
Raton	6	1	7	2	2	0	2	0
Roswell	40	8	75	46	12	6	29	16
Santa Fe	59	20	137	55	1	4	6	7
Tucumcari	1	2	2	3	1	0	2	1
TOTAL	837	193	1,628	730	96	58	217	177

Source: Individual reports by city building inspectors.

ALBUQUERQUE¹ BANKING DATA
(\$000s)

	March 1979	March 1980	% Change March 1979- March 1980
BANKS			
Bank Debits	\$5,514,503.2	\$9,056,948.2	64.2
New Loans and Discounts	130,768.7	121,488.2	- 7.1
Demand Deposits	491,547.3	496,384.6	1.0
Time Deposits	879,914.1	965,727.8	9.8
SAVINGS AND LOAN			
Savings Deposits	\$ 810,500.0	\$ 910,426 ^p	12.3
New Savings Received	55,900.0	95,593 ^p	71.0

^p Preliminary.¹ Bernalillo County for bank information, Albuquerque SMSA for savings and loan data.

Source: Five reporting banks and Federal Home Loan Bank of Little Rock.

CONSUMER PRICE INDEXES AND INDEXES OF SELECTED CATEGORIES
U.S. City Average
(1967=100)

	All Urban Consumers				Revised Series, Wage Earners and Clerical Workers			
	Feb. 1980	Mar. 1980	% Change		Feb. 1980	Mar. 1980	% Change	
			Mar. 79- Mar. 80	Feb. 80- Mar. 80			Mar. 79- Mar. 80	Feb. 80- Mar. 80
ALL ITEMS	236.4	239.8	14.7	1.4	236.5	239.9	14.6	1.4
Food	244.9	247.3	7.3	1.0	245.2	247.5	7.1	0.9
Housing	250.5	254.5	17.0	1.6	250.5	254.4	17.0	1.6
Apparel and Upkeep	171.9	176.0	7.1	2.4	171.5	175.1	6.6	2.1
Transportation	239.6	243.7	23.0	1.7	240.2	244.3	22.9	1.7
Medical Care	257.9	260.2	11.2	0.9	258.7	260.9	11.6	0.8
Entertainment	197.8	200.6	8.5	1.4	196.2	199.5	8.4	1.7
Other Goods & Services	208.1	208.9	8.4	0.4	207.7	208.3	8.2	0.3

Source: U.S. Department of Labor, News.

HOURS AND EARNINGS OF PRODUCTION
CONSTRUCTION AND NONSUPERVISORY EMPLOYEES
New Mexico

	Average Weekly Hours			% Change March 79- March 80	Average Hourly Earnings			% Change March 79- March 80
	March 1980 ^p	Feb. 1980	March 1979		March 1980 ^p	Feb. 1980	March 1979	
Mining	44.7	44.1	43.8	2.1	\$8.75	\$8.74	\$7.80	12.2
Construction	37.0	34.9	35.3	4.8	9.41	9.23	8.94	5.3
Manufacturing	39.5	39.4	40.4	-2.2	5.72	5.73	5.12	11.7
Durable Goods	41.4	41.4	41.3	0.2	6.08	6.08	5.50	10.5
Nondurable Goods	36.3	36.1	38.9	-6.7	5.04	5.06	4.48	12.5
Communication and Utilities	45.3	45.4	40.6	11.6	7.49	7.47	7.05	6.2
Trade ¹	34.2	34.4	34.9	-2.0	5.90	5.80	5.43	8.7
Banking	38.0	39.8	41.6	-8.7	4.24	3.78	3.59	18.1

p Preliminary.

¹ Excludes eating and drinking places.

Source: New Mexico Employment Security Department.

CURRENT ECONOMIC DEVELOPMENTS . . .
(continued from page 21)

the Mining sector in terms of increased activity, recording a substantial 18.9 percent increase from February to March. However, copper production in March was down 5.8 percent from the figure registered in March, 1979.

In summary, the economic slowdown at the national level has acted to moderate the growth of the state economy in recent months. In particular, it has affected the state's construction industry, with soaring interest rates and lessened

availability of credit resulting in a definite decrease in construction activity in the state during the first quarter of 1980. As interest rates have begun to fall in recent months, the outlook for the construction industry in the coming months appears to be somewhat brighter. For the state economy as a whole, the immediate future will likely mean more moderate economic activity in conjunction with the economic downturn at the national level.

1979-1980

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Wage and Salary Disbursements
Average Weekly Wage

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Average Weekly Wage

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Wage and Salary Disbursements

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Out-of-State Visitor Expenditure Survey

[The following article is a summary of "Out-of-State Visitor Expenditure Survey," Bureau of Business and Economic Research, The University of New Mexico, 1979. The original study was funded by the New Mexico Magazine Division of the New Mexico Department of Commerce and Industry. We thank this organization for permission to reprint part of the study.]

Introduction

It is generally agreed that the economy of New Mexico profits from the purchase of goods and services by nonresident visitors. These purchases bring additional money into the state which, in turn, benefit New Mexico's citizens through gains in income and employment. Although the positive effects of visitor expenditures are recognized, little is known about the precise makeup of economic impact. As available data are limited, it is often difficult, if not impossible, to quantify the impact which is attributable to purchases made by out-of-state visitors. As a result, questions such as:

- 1) What geographic areas do these visitors come from,
- 2) How much money is spent,
- 3) What kind of purchases are made, and
- 4) Who benefits from these expenditures,

are likely to be answered subjectively and with little specificity.¹

Information about retail product purchases (e.g., expenditures for clothing, arts, and crafts, etc.) is particularly scarce. In part, the lack of data is caused by a concentration on the more readily recognized visitor purchase areas—transportation, lodging, food, entertainment and recreation. More importantly, however, the problem arises from the difficulty and expense of gathering accurate, comprehensive information on retail purchases. No mechanism exists which easily accounts for visitors as they enter the state or for their subsequent expenditure patterns.

The inability to specify impacts of visitor expenditure was partially redressed in a limited study completed by the Bureau of Business and Economic Research (BBER), University of New Mexico for The New Mexico Magazine, a division of the New Mexico Department of Commerce and

Industry.² The research effort focused on identification and measurement of retail product purchases by a select group of visitors to New Mexico: specifically, what, where and how much was purchased in New Mexico during the visitor's last day. Additional study goals were: 1) to identify trip characteristics (e.g., length of stay, reason or visit, etc.) and 2) to determine the socioeconomic profile of the visitors (e.g., age, occupation, income, etc.).

As noted, the visitor expenditure study was a limited undertaking; the research provides a *partial* picture of the economic impact of product purchases. The study's restrictive framework is a natural consequence of investigating a select group of visitors and excluding a large segment of New Mexico's total visitors.

Beyond this limitation, however, the research effort does give greater insight into the impact of product expenditure. In addition to the economic impact of basic expenditures for food, lodging and transportation, study results illustrate how product purchases made by a particular group of visitors affect New Mexico's retail sector. How much money was spent, what items were purchased and where they were purchased are consequences of the research.

The overall outcome of the visitor expenditure study is discussed following a brief overview of study methodology. For a detailed description of the research and more specific details of results, the reader is referred to "Out-of-State Visitor Expenditure Survey," Bureau of Business and Economic Research, 1979.

Study Background

Data for the investigation of product expenditure were obtained from a survey. To conduct the survey names of potential respondents were ran-

domly selected from mailing lists of subscribers to the New Mexico Magazine (NMM) and members of the Santa Fe Opera (SFO) and the Arabian Horse Association (AHA). By virtue of their association with NMM, SFO and AHA, it was reasonable to expect that a high percentage of this non-resident sample had previously visited the state. The limited nature of the study results from the exclusion of all those visitors who do not subscribe to the New Mexico Magazine or have Santa Fe Opera or Arabian Horse Association membership. Clearly, this exclusion represents a substantial number of the state's visitors.

Information was solicited through a mail-return questionnaire. The survey instrument consisted of questions concerning the respondents' socioeconomic background, trip characteristics of last visit and expenditures during the New Mexico portion of the trip. Because of recall problems, only respondents visiting the state within the past year were asked to answer questions concerning retail product purchases. A copy of the survey form is included in the Appendix.

Approximately 18,800 questionnaires were mailed to the selected sample group.³ Response was favorable with over 6,600 questionnaires returned. This represented a 38 percent return rate. However, budget constraints did not permit analysis of all returned questionnaires. Therefore, the number of surveys actually processed was reduced, and analysis was based on 2,750 (NMM) and 1,075 (SFO) surveys randomly selected from the 6,500 returns received.⁴ Because the number of AHA questionnaires (150) was small, all were processed.

The questionnaire returns of NMM (2,750), SFO (1,075) and AHA (150) were combined to obtain a survey sample of 3,975. Although this sample was not representative of all New Mexico visitors, results do offer an illustration of visitor impact and add to the previously limited data in this area. However, it must be re-emphasized that the description of trip characteristics, socioeconomic profiles and expenditures reflect only a particular subgroup of state visitors. This is a relevant point to consider throughout this report.

In addition, although the total sample was 3,975, not all subsequent analysis was based on this number. The questionnaire was designed so

that respondents making a recent visit would answer questions about the trip while respondents not visiting recently would answer only those questions concerning their socioeconomic background and future visiting plans. Therefore, response frequencies vary among questions. For example, in some instances (e.g., Question 1) all 3,975 nonresidents answered, while in others (e.g., Question 5) only recent visitors responded.

Study Results

Tabulation of responses to Questions 1 and 2 supported the original contention that the NMM, SFO and AHA sample was likely to represent a group that consisted of many past visitors to New Mexico. Over 95 percent of those surveyed said that they had visited previously. Moreover, many indicated several visits, with over 19 percent specifying between six and ten previous trips. The median number of previous visits was greater than six.

Although not a question directly related to economic impact, the sampled visitors were asked (Question 3) to rank the aspects of New Mexico most enjoyed. Their responses are shown in Table 1. As shown, most indicated New Mexico's greatest assets to be "mountains and climate."

TABLE 1
NEW MEXICO ENJOYABLE ASPECTS

<i>Enjoyable Feature</i>	<i>% of Times Ranked First</i>
Mountains	33.8%
Climate	31.2
Historical Sites/National Parks	26.0
Indian Pueblos/Spanish Villages	25.6
Wide Open Spaces	24.2
Other	24.1
Arts/Crafts Shops	19.3
Sporting Events	3.6

At this stage in the survey respondents were asked if they had visited New Mexico recently.⁵ Those sample members answering "yes" were directed to several questions concerning their latest trip. Respondents citing no visit within the specified time period were requested to skip trip related questions (i.e., Questions 5 through 12). Nonresidents who had not been to New Mexico recently were instructed to skip these questions

because of recall problems. That is, several of the trip-specific questions required detailed answers (e.g., how much was spent for clothing), and it was assumed that respondents not visiting New Mexico recently would be unable to answer such questions without a high probability of error.

Tabulation of Question 4 revealed that about 59 percent of the sample had visited New Mexico

within the specified 12 or 24 month time period. Responses (Tables 2 through 6) show that during the most recent visit, the majority (71 percent) had come to the state for nonbusiness related reasons. On average respondents remained in New Mexico about five days and traveled by personal car in a party consisting of two to three members (including respondents).

TABLE 2
VISIT NEW MEXICO LAST 12 or 24 MONTHS¹

<i>Response</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Yes	2,353	59.2%
No	1,442	36.3
No Reply	180	4.5
Total	3,975	

TABLE 3
PURPOSE OF LATEST VISIT

<i>Primary Purpose</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Business	169	7.2%
Pleasure	1,276	54.2
Business and Pleasure	499	21.2
Visit Relatives	397	16.9
No Reply	12	0.5
Total	2,353	

TABLE 4
LENGTH OF VISIT IN NEW MEXICO

<i>Length Of Stay¹ (Days/Nights)</i>	<i>Days</i>		<i>Nights</i>	
	<i>No. of Responses</i>	<i>% of Total Responses</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
1 to 2	284	12.1%	382	16.2%
3 to 5	864	36.7	656	27.9
6 to 10	705	30.0	514	21.8
11 to 15	190	8.1	158	6.7
16 to 25	83	3.5	55	2.3
Greater than 26	69	2.9	40	1.7
No Reply	159	6.7	548	23.3
Total	2,353		2,353	

1. Median length of stay was 5.3 days and 4.7 nights.

TABLE 5
NUMBER OF MEMBERS IN VISITING PARTY
(Excluding Respondent)

<i>No. in Party¹</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
1	990	42.1%
2	363	15.4
3	314	13.3
4	155	6.6
5	64	2.7
6	47	2.0
7	74	3.1
No Reply	346	14.7
Total	2,353	

TABLE 6
MODE OF TRANSPORTATION IN NEW MEXICO

<i>Transportation</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Own Car	1,678	71.3%
Rental Car	361	15.3
Other	302	12.8
No Reply	12	0.5
Total	2,353	

1. Median number of people in party (including respondent) was 2.5 members.

Answers to questions about in-state purchases show clearly that New Mexico's economy benefited from the visits of NMM subscribers and SFO and AHA members. This observation is supported by data given in Table 7. As shown in the distribution of total expenditure, these visitors spent over \$1,264,000 while in New Mexico. Median expenditure was \$300. This expenditure reflects purchases of lodging, food and recreation plus expenses for retail products—purchases which offer income and employment to New Mexico's citizens.

Although results of Table 7 are important, the primary intent of the research effort was to identify the impact of product purchases. This issue was addressed in survey Questions 10 through 12. Specifically, Question 10 inquired, "Beyond basic expenses for transportation, food, lodging, entertainment and recreation, did you make any other purchases during your stay in New Mexico?" Responses show that over 76 percent of the sample group recently visiting the state had indeed made other purchases during the last visit. This means income and employment were generated in sections of New Mexico's economy that are not directly related to basic visitor expenditure.

TABLE 7
TOTAL EXPENDITURE

<i>Expenditures Bracket¹</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Less than \$25	54	2.3%
\$26 to \$50	91	3.9
\$51 to \$100	240	10.2
\$101 to \$200	360	15.3
\$201 to \$300	342	14.5
\$301 to \$400	190	8.1
\$401 to \$500	250	10.6
\$501 to \$600	83	3.5
\$601 to \$700	45	1.9
\$701 to \$800	85	3.6
\$801 to \$900	28	1.2
\$901 to \$1,000	140	5.9
\$1,001 to \$2,000	164	7.0
\$2,001 to \$3,000	38	1.6
Greater than \$3,000	40	1.7
No Reply	203	8.6
Total	2,353	

1. Total expenditure was \$1,264,200. Median expenditure was \$300.

That portion of the sample answering positively to Question 10 was directed to Questions 11 and 12. These questions identified purchases of products by category, amount and general geographic area. Retail purchases by product category and amount are given in Table 8. The table reflects 1,794 nonresident responses, or about 45 percent of the original survey group. Total product purchases for the sample during their stay amounted to \$713,100. In other words, 56 percent of total in-state purchases (Table 7) went for retail product goods such as clothing, Indian pottery, sporting equipment, etc.

Table 8 shows that purchases of Indian jewelry and fine arts far exceeded amounts spent for other products. Indian products in general constituted the area of most sales; adding expenditures for Indian rugs, pottery and jewelry shows that purchases of Indian goods accounted for over 39 percent of retail product purchase. Moreover, it is reasonable to expect that some of the other purchase categories (e.g., fine arts, souvenirs, etc.) were partially comprised of Indian made items.

Two comments concerning Table 8. First, in reference to the "other" category (17 percent of purchases), examination of questionnaires revealed that most "other" purchases were for: 1) horse equipment (reflecting the AHA group), 2) Santa Fe Opera tickets, and 3) other products not specifically represented in Question 11 (e.g., presents, stationery, household items, etc.). However, it was found that a few respondents also classified as "other" some purchases that were basic (e.g., food, lodging, etc.), already listed in Question 11 (e.g., books), or that fell outside the intended range of retail products (e.g., land purchases). Although this was not a serious problem because so few respondents answered in this manner, the effects are: 1) to overstate total product expenditure to the extent that basic expenditures are specified as "other," 2) to understate some listed product sales such as "books," and 3) to overstate total product sales to the extent that "other" incorporates nonproduct items.

The consequence of the misuse of the product category "other" is that the true distribution of product purchase is not accurately reflected in Table 8. Although investigation of questionnaires proved this not a serious drawback, actual totals

TABLE 8
EXPENDITURES BY PRODUCT CATEGORY

	<i>No. of Responses</i>	<i>Median Product Expenditure</i>	<i>Total Product Expenditure</i>	<i>% of Total Product Expenditure</i>
Clothing—Men's	303	\$ 50	\$ 26,361	3.7%
Clothing—Women's	407	50	42,735	6.0
Clothing—Children's	136	30	7,344	1.0
Wine & Liquor	314	20	12,246	1.7
Indian Jewelry	817	100	177,289	24.8
Costume Jewelry	88	20	11,176	1.6
Fine Arts, Paintings or Sculpture	335	150	151,755	21.3
Indian Pottery	369	50	52,398	7.3
Indian Rugs	160	125	49,600	6.9
Souvenirs	395	25	15,800	2.2
Skis	21	99	2,373	0.3
Hunting/Fishing Equip.	51	42	3,723	0.5
Sports Clothing	25	50	2,425	0.3
Handmade Furniture	23	200	17,664	2.5
Records & Books	294	20	9,408	1.3
Photographic Equip., Film & Development	243	15	9,234	1.3
Other	439	55	121,641	17.0
Total			\$713,172	

(e.g., records and books \$9,408) must be viewed somewhat conservatively.

Another difficulty with survey Question 11 arises because a possible bias was introduced by not listing all possible retail product categories (e.g., art supplies, antiques, household items, etc.). That is, while respondents could use the product list as a recall device, thus enabling them to more readily remember specific expenditures during their visit, products not listed were possibly more easily overlooked and consequently not listed in the "other" category as was intended. Therefore, it is possible that visitors made some purchases which they did not indicate in Question 11. To the extent that this occurred, there will be a bias in favor of the listed items.

In order to identify the total amount each person spent on those items listed in Table 8, expenditures given for items listed in Question 11 were totaled per respondent. For example, one respondent spent \$250 (women's clothing), \$20 (costume jewelry), and \$50 (Indian baskets) for a total product expenditure of \$320. Expenditure totals are shown in Table 9. Median total expenditure for the sample was \$200.

Respondents making purchases (see Table 8) were also asked to give the general location(s) in New Mexico of their various purchases and were

TABLE 9
EXPENDITURE, ALL PRODUCTS, PER RESPONDENT

<i>Expenditure Bracket¹</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Less than \$100	421	17.9%
\$100 to \$199	293	12.5
\$200 to \$299	181	7.7
\$300 to \$399	122	5.2
\$400 to \$499	72	3.1
\$500 to \$599	55	2.3
\$600 to \$699	47	2.0
\$700 to \$799	32	1.4
\$800 to \$899	21	0.9
\$900 to \$999	23	1.0
\$1,000 to \$1,099	25	1.1
\$1,100 to \$1,199	20	0.8
\$1,200 to \$1,299	5	0.2
\$1,300 to \$1,399	8	0.3
\$1,400 to \$1,499	7	0.3
Greater than \$1,500	98	4.2
No Reply	923	39.2
Total	2,353	

1. Median total product expenditure is \$200.

requested to check all areas that applied. Responses are given in Table 10. Clearly, the Albuquerque, Santa Fe and Taos areas are impacted the most relative to any other specific area of New Mexico. Analysis of questionnaires checked "other" location(s) (12.5 percent) shows no one particular location represented consistently.

TABLE 10
GENERAL LOCATION(S) OF PURCHASES

<i>Location</i>	<i>% Making Purchases</i>
Albuquerque Area	36.5%
Santa Fe Area	47.9
Taos Area	19.7
Carlsbad Area	4.4
Raton Area	2.7
Gallup Area	4.8
Las Cruces Area	7.5
Roswell Area	4.4
Farmington Area	3.0
Other Areas	12.5

As noted previously, the entire sample, irrespective of a previous visit to New Mexico, was asked to indicate future New Mexico visiting plans and to answer a few socioeconomic inquiries. Responses to the latter group of questions, shown in Tables 11 through 19, illustrate the sample's socioeconomic profile. For example, 73 percent of the sample are planning a trip to

TABLE 11
PLAN A VISIT TO NEW MEXICO?

<i>Response</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Yes	2,902	73.0%
No	898	22.6
No Reply	175	4.4
Total	3,975	

TABLE 12
PRIMARY PURPOSE OF VISIT?

<i>Purpose</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Business	146	3.7%
Pleasure	2,128	53.5
Business and Pleasure	704	17.7
No Reply	997	25.1
Total	3,975	

New Mexico within the next 12 months. Those planning a visit intend to come to New Mexico primarily for pleasure.

The socioeconomic profile questions reveal that most respondents are residents of Texas, Colorado or California. A surprising outcome was the number of New York and Illinois residents that visited or plan to visit.

Tabulated responses show that about 54 percent of those surveyed were male, with a median age of around 54 years. Almost 73 percent were married and lived in a household with a median of 2.3 members.

Results show respondents to be highly educated: over 58 percent had college degrees; of those, over 30 percent indicated an advanced college degree. The relatively high educational level evidenced in the sample was also reflected in responses to occupation and income questions. Median family income was \$27,500. And 55 percent of those surveyed said they were in management or were professionals.

TABLE 13
STATE OF RESIDENCE

<i>Response</i>	<i>% of Sample</i>
Texas	18.5%
Colorado	11.6
California	11.2
Illinois	5.1
New York	4.4
Arizona	3.7
All Other States	Less than 3%

TABLE 14
AGE DISTRIBUTION

<i>Age Range¹</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
20 to 24	63	1.6%
25 to 29	149	3.7
30 to 34	270	6.8
35 to 39	304	7.6
40 to 49	774	19.5
50 to 65	1,541	38.8
Over 65	830	20.9
No Reply	44	1.1
Total	3,975	

1. Median age was 54 years.

TABLE 15
MARITAL STATUS

<i>Marital Status</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Married	2,888	72.7%
Single	831	20.9
Divorced	186	4.7
No Reply	70	1.8
Total	3,975	

TABLE 16
HOUSEHOLD SIZE

<i>Number in Household¹</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
1	245	6.2%
2	1,007	25.3
3	285	7.2
4	296	7.4
5	121	3.0
6	47	1.2
7	11	0.3
8	4	0.1
9	4	0.1
10	1	0.0
11	1	0.0
No Reply	1,953	49.1
Total	3,975	

1. Median number in household was 2.3 members.

TABLE 17
EDUCATIONAL LEVEL

<i>Educational Level</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Less than High School	56	1.4%
High School	588	14.8
Some College	949	23.9
College Degree	1,125	28.3
Advanced Degree	1,208	30.4
No Reply	49	1.2
Total	3,975	

TABLE 18
INCOME DISTRIBUTION

<i>Income Range¹</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Less than \$10,000	309	7.8%
\$10,000 to \$15,000	469	11.8
\$16,000 to \$20,000	466	11.7
\$21,000 to \$25,000	494	12.4
\$26,000 to \$30,000	428	10.8
\$31,000 to \$35,000	376	9.5
Greater than \$35,000	1,193	30.0
No Reply	240	6.0
Total	3,975	

1. Median income was \$27,515

TABLE 19
OCCUPATION CATEGORY

<i>Occupation</i>	<i>No. of Responses</i>	<i>% of Total Responses</i>
Management	696	17.5%
Professional	1,512	38.0
Skilled Craftsman	179	4.5
Retail/Wholesale	114	2.9
Retired	851	21.4
Other	554	13.9
No Reply	69	1.7
Total	3,975	

Comparisons with National Data

Comparisons of socioeconomic factors between the surveyed group and national statistics⁶ show that the typical respondent of this research study (i.e., NMM subscribers, SFO and AHA members) was not representative of the national norm. In general, these New Mexico visitors are more highly educated (national statistics show only about 16 percent with college degrees), in higher median income brackets (national median income in 1977 was \$16,010), and more likely to be employed in management or professional positions (national statistics show professional at 16 percent and management at 11 percent). In other words, research results reflect responses from people in higher age brackets and with high incomes and superior educational backgrounds. Therefore, it must be emphasized that in no way do expenditures, trip characteristics, etc., illus-

trated throughout the research represent a typical U.S. household and/or New Mexico visitor.

Characteristics of the surveyed visitor were also compared to characteristics of the national traveler.⁷ Results showed that sample respondents had higher incomes. National travel statistics indicate that 40 percent of all travelers have incomes greater than \$20,000. The survey shows almost 63 percent with incomes above \$20,000. A contrast was also found in trip purpose. Only 26 percent of the national travelers indicated their trip purpose was pleasure; for the sample, the percentage was 54 percent. Another contrast was in occupation. Occupational comparisons show 12 percent of national travelers in professional occupations and about 10 percent in management. On the other hand, 18 percent of the sample responded "professional" and 38 percent "management."

State Comparisons

To determine if residents of geographically distant states responded differently than did residents of states closer to New Mexico, questionnaires from residents of Texas, California and New York were examined separately. (Table 13 shows 34 percent of the total survey group are residents of one of these three states.)

Analysis of responses shows that Texas residents were more frequent visitors to New Mexico with median number of visits 24.5. California and New York residents had medians of 6.2 and 4.0, respectively.

Texas residents said New Mexico's most enjoyable feature was its mountains with over 57 percent of the responses from Texas ranking mountains as first. California responses show "wide open spaces" while New York residents specified "climate" and "wide open spaces" as most enjoyable aspects of the state.

In all three state samples the majority of responses indicated that a visit to New Mexico was anticipated within the following year. Consistent with their higher frequency of visits, a larger proportion of Texas residents (94 percent) said that they planned a visit. Positive responses from California and New York residents represented about 84 percent and 71 percent, respectively, of the samples. In each group, the majority (over 55

percent) said their planned visits would be for pleasure.

Analysis of responses to Questions 16 through 21 shows that visitors from Texas, California and New York share similar socioeconomic characteristics. The majority in each group of respondents were between 49 and 66 years of age, college educated and employed in either management or professional level positions. Texas residents were more frequently in higher income brackets, with over 40 percent having annual incomes above \$35,000. Responses from California and New York show over 32 percent (California) and 30 percent (New York) in the over \$35,000 income range.

Residents from the three states were also highly educated. In all three groups over 28 percent of the sample hold advanced college degrees. New York had the largest percentage of retired respondents, or about 22 percent of the sample. Texas and California both showed approximately 15 percent retired.

Responses to questions concerning most recent visit (survey Questions 4 through 12) show that the majority of Texas, California and New York respondents said they visited New Mexico for pleasure. Twenty-nine percent of the New York residents indicated trip purpose was "to visit relatives," and they tended to stay longer than did Texas or California residents. The median length of stay was 4.4, 6.5 and 7.7 days, respectively, for Texas, California and New York.

Most residents from Texas (84.7 percent) said they used their own car to get around the state. The percentages for California and New York were 62 percent and 36 percent. A large percentage of New York residents (37 percent) said they rented cars.

Median total expenditure (Question 9) was \$300 (Texas and California) and \$355 (New York). In all three groups the majority (over 72 percent) said that they had made additional purchases for products listed in Question 11.

Responses to Question 11 show that Texas residents most frequently mentioned "fine arts" (painting or sculpture) as an expenditure, with this category accounting for over 31 percent of total product expenditure. California and New York residents mentioned "Indian jewelry" most

frequently. In the former case, this item accounted for about 23 percent of total product expenditure; in the latter, Indian jewelry was over 33 percent of total expenditure.

In summary, visitors from Texas, California and New York had similar socioeconomic characteristics. Texas residents tended to visit more frequently and stay a shorter time. New York residents usually had larger total median expenditures during their stay and purchased more "Indian-related" goods.

In general, the survey results show what might be expected. That is, residents from distant states do not come as often to New Mexico (higher transportation costs), use more rental cars, stay longer and buy Indian products, whereas residents from nearby states come more frequently, spend less and purchase fewer "Indian type" goods.

Income and Length of Stay Impact on Expenditure

It is realistic to assume that a visitor who remains longer in the state and/or is in a higher income bracket will generally spend more than visitors in lower incomes and/or who stay for shorter lengths of time. Therefore, if survey data support this conclusion, they offer a way to test whether or not questionnaire responses present accurate descriptions of the visitors.

Using the combined survey data, a regression technique was applied to identify and measure the relationship between expenditure, income and length of stay. The anticipated relationship between these variables was that expenditure would be positively correlated with both income and length of stay. That is, respondents in higher income brackets who stay in New Mexico for longer lengths of time would have higher levels of expenditures than respondents who stay in New Mexico a shorter time and who are in the lower income range.

The anticipated relationship was of the form:

$$E_x = \alpha + \beta X + \delta Y$$

where: E_x = total expenditure (Question 9)

X = length of stay in days (Question 6)

Y = income bracket (Question 20).

Regression results were:

$$E_x = -66.2 + 27.9X + 91.4Y$$

The positive coefficients of X and Y show that expenditures will rise as length of stay (X) and income (Y) increase. In this case, results indicate that: 1) for every extra day in New Mexico a visitor spends \$28, and 2) for each \$5,000 income bracket increase, spending increases \$91.

In addition to regression analysis, multiple frequency distributions were computed to measure the influence of income on expenditure. The results support the regression statistics. Over 58 percent of the respondents indicating total expenditure of \$700 or more also said they were in the over \$35,000 income bracket. In contrast, about 17 percent of the respondents having incomes of \$20,000 or less indicated expenditures of \$700 or more. Most respondents (about 78 percent) giving expenditures greater than \$1,500 said their income was over \$25,000.

Comparisons of New Mexico Magazine, Santa Fe Opera and Arabian Horse Association Survey Responses

It is useful to illustrate survey responses of the three subgroups within the sample. The comparison shows the level of similarity/dissimilarity among NMM, SFO and AHA. Comparisons of responses are given in Tables 20 through 24. Table 23 is of particular interest as a look at the percentage distribution of product expenditure reveals a similarity among NMM subscribers and SFO and AHA members: note that within all three groups the categories of major purchase were Indian jewelry and fine arts.

Expenditure Impact of New Mexico Magazine, Santa Fe Opera, and Arabian Horse Association

Tables 7, 8 and 9 show expenditure levels and purchases of the sampled visitors. To the extent that the sample is representative of *all* out-of-state NMM subscribers and SFO and AHA members, estimates of purchases of *all* NMM, SFO and AHA nonresidents can be also computed. The estimate should more accurately indicate the impact of this particular visitor group on New Mexico's economy. This issue is addressed in the following discussion.

During the survey period the universe of NMM, SFO and AHA was approximately 57,800:

TABLE 20

SOCIOECONOMIC DATA: NEW MEXICO MAGAZINE,
SANTA FE OPERA, ARABIAN HORSE ASSOCIATION

	NMM	SFO	AHA
Occupation:			
Management (%)	17.7	16.1	24.7
Professional (%)	33.4	50.0	36.7
Retired (%)	23.3	18.9	5.3
Income:			
Less than/equal to \$20,000 (%)	35.4	22.8	17.3
\$21,000 to \$35,000 (%)	32.8	33.3	26.0
Greater than \$35,000 (%)	25.0	40.0	50.0
Education:			
High School (%)	18.7	3.8	22.0
Some College (%)	26.8	14.8	36.0
College Degree (%)	27.9	29.3	28.0
Advanced Degree (%)	23.1	51.6	12.7
Age:			
Under 40 (%)	19.7	16.0	47.3
40 to 49 (%)	17.5	23.7	26.0
50 to 65 (%)	39.2	39.9	23.3
Over 65 (%)	22.2	20.1	2.0
Married (%)	73.1	71.9	70.0
Male Respondents (%)	53.2	59.8	29.3
Family Size (Median Number)	2.24	2.22	3.35

42,000 NMM subscribers, 15,000 SFO members and 800 AHA members. If it is assumed that the sample of 3,975 was reasonably representative of the whole, observations derived from sample data can, within measurable statistical error, be extended to the universe. For example, if 53 percent of the NMM sample visited New Mexico within the previous 12 month period, then it can be suggested that about 53 percent (plus or minus some statistical error measure) of the entire NMM group visited the state. This analysis extending from sample data to the universe was completed in order to measure total impact. It was assumed: 1) that the NMM and SFO group constituted a random sample, and 2) that there was no non-response bias. That is, particular NMM subscribers and/or SFO members (e.g., those with higher incomes) were no more or less likely to respond than were others in the sample. The AHA sample was excluded from part of the analysis because the sample size was low (150 returns). Applying

TABLE 21

TRIP DATA: NEW MEXICO MAGAZINE,
SANTA FE OPERA, ARABIAN HORSE ASSOCIATION

	NMM	SFO	AHA
Previous Visits to New Mexico (Median Number)	6.2	8.3	2.9
Most Enjoyable New Mexico Feature (% Ranked First)			
Historical Sites, National Parks	27.1	24.6	7.8
Climate	38.7	24.3	19.4
Sporting Events	2.5	2.8	39.5
Wide Open Spaces	28.7	16.4	14.0
Arts/Crafts Shops	20.4	24.3	13.2
Indian Pueblos/Spanish Villages	26.4	24.6	17.1
Mountains	40.4	31.3	24.0
Other	19.5	40.2 ¹	16.3
Primary Purpose of Latest Visit (%)			
Business	6.5	6.3	19.4
Pleasure	49.3	72.6	27.1
Business and Pleasure	20.7	16.4	51.9
Visit Relatives	22.9	4.5	0.8
Days Spent in New Mexico, Latest Visit (Median Number)	6.0	3.9	7.7
Number in Visiting Party, Including Respondent (Median Number)	2.48	2.47	3.80
Form Transportation Used During Latest Visit (%)			
Own Car	67.8	79.9	73.6
Rental Car	15.6	13.8	20.6
Other	15.9	6.2	6.2
Total Expenditures, Latest Visit (Median)	\$300	\$300	\$757
Total Product Expenditures, Latest Visit (Median)	\$200	\$165	\$175
General Location(s) of Products Purchases (%)			
Albuquerque Area	41.3	17.3	68.2
Santa Fe Area	44.6	62.7	18.6
Taos Area	20.3	21.2	3.9
Anticipate Visit to New Mexico Next Year (%)	73.1	71.1	85.3
Purpose of Planned Visit (%)			
Business	3.2	3.3	14.7
Pleasure	53.7	57.8	20.7
Business and Pleasure	18.1	12.4	48.0

1. Feature specified most frequently was the Santa Fe Opera.

TABLE 22
TOTAL EXPENDITURE: NMM, SFO, AHA

Expenditure Bracket	NMM % of Total ¹ Responses	SFO % of Total ² Responses	AHA % of Total ³ Responses
Less than \$25	2.1%	3.2%	0.0%
\$26 to \$50	3.8	4.9	0.0
\$51 to \$100	10.6	10.7	3.1
\$101 to \$200	15.2	18.0	3.9
\$201 to \$300	14.1	16.2	12.4
\$301 to \$400	8.5	7.1	7.0
\$401 to \$500	9.8	13.0	10.1
\$501 to \$600	3.7	3.1	3.9
\$601 to \$700	1.8	2.3	1.6
\$701 to \$800	3.7	2.3	8.5
\$801 to \$900	1.3	1.0	0.8
\$901 to \$1,000	5.7	4.2	17.1
\$1,001 to \$2,000	6.7	6.6	11.6
\$2,001 to \$3,000	1.4	1.3	5.4
Greater than \$3,000	1.7	1.5	2.3
No Reply	9.8	4.7	12.4
	100.0	100.0	100.0

1. Median total expenditure is \$300. Total expenditure is \$849,114.

2. Median total expenditure is \$300. Total expenditure is \$308,112.

3. Median total expenditure is \$757. Total expenditure is \$107,124.

the above assumptions, the following analysis was performed. Each survey group is discussed independently.

New Mexico Magazine Total Impact

Responses show that the 1,449 NMM subscribers surveyed spent an estimated total of \$849,114 during their latest visit to New Mexico (sometime during the period April, 1978 through April, 1979). With 2,750 questionnaires processed, the 1,449 responses represented about 53 percent of the returns. Therefore, given a random sample, about 53 percent of the total universe of out-of-state NMM subscribers are assumed to have visited New Mexico during this 12-month period. In other words, approximately 22,196 NMM subscribers visited the state.

The estimated mean "average" expenditure of the 1,449 respondents was found to be about \$586.⁸ Consequently, it is estimated that NMM subscribers visiting the state within the last year spent an estimated total of about \$13,007,100. Assuming a 95 percent confidence interval, the

estimate of total expenditure ranges from \$11,419,200 to \$14,669,700.

Analysis was also completed to estimate total product expenditures. Responses from 1,011 NMM subscribers show that an estimated total of \$521,443 was spent on goods listed in Question 11. This represented product purchases by about 37 percent of the sample.

The mean product expenditure was about \$528. Therefore, assuming 37 percent of all out-of-state NMM subscribers spent this amount on various products, an estimated total of \$8,175,000 was spent in New Mexico during the last year for items such as clothing, Indian pottery, etc. With a 95 percent confidence interval, the total ranges from \$6,483,100 to \$10,048,000. Most of this impact (e.g., retail purchases) was in the Albuquerque and Santa Fe areas of New Mexico.

Santa Fe Opera Total Impact

There are approximately 15,000 out-of-state residents who are members of the Santa Fe

TABLE 23
EXPENDITURE BY PRODUCT CATEGORY
NEW MEXICO MAGAZINE, SANTA FE OPERA,
ARABIAN HORSE ASSOCIATION

Product Category	NMM % of Total Product Expenditure ¹	SFO % of Total Product Expenditure ²	AHA % of Total Product Expenditure ³
Clothing—Men's	4.3%	1.8%	4.6%
Clothing—Women's	5.7	6.7	6.8
Clothing—Children's	1.1	0.5	2.2
Wine & Liquor	1.6	1.6	4.6
Indian Jewelry	26.4	18.6	35.0
Costume jewelry	1.5	1.6	2.0
Fine Arts, Paintings or Sculpture	19.4	27.8	15.5
Indian Pottery	7.3	8.5	1.2
Indian Rugs	6.2	9.5	6.5
Souvenirs	2.4	1.3	4.6
Skis	0.4	0.1	0.8
Hunting/Fishing Equip.	0.6	0.2	1.5
Sports Clothing	0.2	0.3	3.2
Handmade Furniture	2.3	3.2	1.7
Records & Books	1.2	1.6	0.1
Photographic Equip., Film & Development	1.1	1.8	1.2
Other	18.6	14.7	8.5

1. Total product expenditure is \$521,443.

2. Total product expenditure is \$168,151.

3. Total product expenditure is \$23,518.

Opera. If it is assumed that the sample of SFO members was random, inferences may be extended from the sample to the universe to estimate total impact.

Estimated total expenditure for SFO members was \$308,112. As in the NMM case, these expenditures were made in New Mexico during the time between April, 1978 and April, 1979.

The responses represented about 55 percent of the processed SFO survey returns. Therefore, it is assumed that 8,250 (55 percent) out-of-state SFO members made expenditures in New Mexico during this same period.

The mean total expenditure was computed to be about \$524. This means that all SFO members from out-of-state spent an estimated \$4,323,000 in New Mexico during their visit. Assuming a 95 percent confidence interval, total expenditure

ranged from \$3,538,100 to \$5,180,800. SFO total product expenditure shown was \$168,151.

The mean total expenditure for products listed in Question 11 was \$497. Assuming that 32 percent of the total number of out-of-state SFO members also spent this much results in an estimated total product expenditure of about \$2,386,600. Applying a 95 percent confidence range as before, estimated total product expenditure was \$1,580,900 to \$3,352,000. Most of this impact went to the Santa Fe area.

Arabian Horse Association Total Impact

Total impact of expenditures by NMM subscribers and SFO members was shown. In these two cases, there was statistical support for computing total impacts because the sample sizes were sufficiently large. However, as indicated pre-

TABLE 24
EXPENDITURE, ALL PRODUCTS, PER RESPONDENT
NEW MEXICO MAGAZINE, SANTA FE OPERA,
ARABIAN HORSE ASSOCIATION

<i>Expenditure Bracket</i>	<i>NMM % of Total¹ Responses</i>	<i>SFO % of Total² Responses</i>	<i>AHA % of Total³ Responses</i>
Less than \$100	18.0%	18.0%	16.3%
\$100 to \$199	12.6	12.2	12.4
\$200 to \$299	7.7	7.8	7.0
\$300 to \$399	5.5	4.4	5.4
\$400 to \$499	3.7	1.6	1.6
\$500 to \$599	2.4	2.1	2.3
\$600 to \$699	2.1	1.3	4.7
\$700 to \$799	1.5	1.3	0.0
\$800 to \$899	0.9	0.8	0.8
\$900 to \$999	1.1	1.0	0.0
\$1,000 to \$1,099	1.2	0.5	1.6
\$1,100 to \$1,199	1.1	0.5	0.0
\$1,200 to \$1,299	0.3	0.0	0.0
\$1,300 to \$1,399	0.4	0.3	0.0
\$1,400 to \$1,499	0.4	0.2	0.0
Greater than \$1,500	4.1	4.7	2.3
No Reply	<u>37.1</u>	<u>43.4</u>	<u>45.7</u>
	100.0	100.0	100.0

1. Median total product expenditure is \$200.

2. Median total product expenditure is \$165.

3. Median total product expenditure is \$175.

viously, there is little statistical support for the AHA survey because the number of sample returns was too small and because of problems with identifying the universe. Therefore, it is not statistically defensible to extend inferences from the AHA sample to the AHA universe. Given the small number of returns, the following discussion must be viewed as illustrative. The reader must consider all total expenditure impacts given here as error prone and, therefore, tenuous.

Approximately 800 surveys were mailed to AHA members. Although it is believed that the universe is much larger than the 800 available names of members, its actual size could not be determined. Therefore, impact analysis was based on the 800 membership universe.

Results show that about 75 percent of the AHA sample made purchases during the most recent visit to New Mexico. Total estimated ex-

penditure was \$107,124. These expenditures were made sometime during the period of April, 1977 through April, 1979.

The mean expenditure for the AHA respondents was \$948. If it is assumed that 75 percent of the 800 AHA members (600) made expenditures during their stay, total estimated expenditure was \$568,800.

AHA total product purchases totaled approximately \$23,518. About 47 percent of the sample responded to Question 11. The mean total estimate for product expenditure was \$342. Therefore, total product expenditure for all AHA out-of-state members during their visit was about \$128,600. Confidence intervals were not calculated for the AHA survey because of the small sample size and other similar difficulties. The majority of AHA purchases were made in the Albuquerque area.

Conclusion

Results of the visitor expenditure research effort show that nonresident visitors contribute to New Mexico's economy. Although effects of basic travel-related expenditures are recognized, little was known previously concerning retail product purchases.

An important outcome of the research was the identification of economic impact in the state beyond the more commonly acknowledged benefits arising from a visitor's basic travel-related purchases (e.g., food, transportation, lodging, recreation and entertainment). In this regard, the research study illustrated that visitors also positively impacted New Mexico's retail sector. This impact occurred from product purchases for items such as men's clothing and Indian pottery.

The fact that these selected visitors were a source of economic benefit to the state was clearly established by responses to the question, "How much would you estimate your total expenditures to be during your visit to New Mexico?" Answers to this question show the estimated total expenditure was \$1,264,300 for the combined sample. The NMM subscriber's portion of total expenditure was \$849,100. The SFO and AHA samples gave totals of \$308,100 and \$107,100, respectively. The total expenditure estimates represent basic travel-related expenses in such areas as lodging and transportation, *plus* purchases of consumer retail products (e.g., men's clothing, furniture, etc.). The latter expenditures were calculated separately to measure their impact separately from travel-related expenses.

For the combined sample the product categories of highest expenditure were Indian jewelry and fine arts (painting or sculpture). These purchases accounted for 24.8 percent and 21.3 percent, respectively, of total product expenditure. The general area of major purchase was Indian-made products. Sales of Indian jewelry, rugs and pottery represented about 39 percent of total purchases.

Using a 95 percent confidence interval, total expenditure and total product expenditure were calculated for the universe of out-of-state NMM subscribers (41,880) and out-of-state SFO members (15,000). Total expenditure was computed to range from \$11,419,200 to \$14,669,700 for

NMM subscribers and \$3,538,100 to \$5,180,800 for the SFO members. Total product expenditure ranged from \$6,483,100 to \$10,048,000 for NMM subscribers and \$1,580,900 to \$3,352,000 for SFO members. Responses show that most of the impact from product purchases occurred in the Albuquerque, Santa Fe and Taos areas.

A final comment is required. Research focused on a particular group of visitors. However, investigation suggests the group is not representative of all visitors to New Mexico. Therefore, results must be viewed restrictively. The study's outcome merely illustrates the impact of a small portion of visitors; in no way should results be considered as reflective of the true total impact to New Mexico arising from purchases made by visitors to the state.

FOOTNOTES

1. The U.S. Travel Data Center estimates 1978 U.S. resident travel spending in New Mexico for incidentals (which includes retail product purchases) at about 81.7 million. Travel-generated payroll in the state is estimated for general retail trade to be about 10.4 million and employment in general retail trade (travel-generated) to be around 1,541 jobs. Further details are not available.
2. Temple, John L., *Out-of-State Visitor Expenditure Survey*, Bureau of Business and Economic Research, University of New Mexico, August, 1979.
3. Thirteen thousand names were selected from the NMM list of 41,888 and 5,000 names from the SFO list of 15,000. All 809 names in the AHA mailing list were used.
4. 4,900 NMM and 1,600 SFO questionnaires were returned.
5. A 12-month time period was specified for NMM and SFO. On the other hand, a 24-month interval was applied to AHA because the association's last meeting in New Mexico was more than 12 months prior to the survey period.
6. U.S. Bureau of the Census, *Current Population Reports: Population Profile of the United States, 1978*, Series P-20, No. 336, April, 1979.
7. Goeldner, Charles R. and Karen R. Dicke, *Travel Trends in the United States and Canada*, Business Research Division, University of Colorado in cooperation with the Travel Research Association, 1978 edition.
8. The mean "average" rather than the median was used to compute total expenditure and total product expenditure. The former statistic accurately describes actual expenses whereas the latter statistic provides an illustrative figure of expenditure undistorted by extremes.

APPENDIX A

EXPENDITURE SURVEY OF
OUT-OF-STATE VISITORS TO NEW MEXICO

(To be completed by an adult member of the household)

1. Have you ever visited New Mexico?
☐ Yes (Go to question 2)
☐ No (Skip questions 2 through 12 and go to question 13)
 2. How many times have you visited New Mexico?
☐ Times (Write in number)
 3. What aspect do you enjoy *most* about New Mexico? [Rank from 1 (most important) to 3 (least important)]
☐ Historical Sites, ☐ Arts/Crafts Shops
☐ National Parks ☐ Indian Pueblos/
☐ Climate ☐ Spanish Villages
☐ Sporting Events ☐ Mountains
☐ Wide Open Spaces ☐ Other (Please specify) _____
 4. Have you visited New Mexico within the last 12 (24) months? *
☐ Yes (Go to question 5)
☐ No (Skip question 5 through 12 and go to question 13)
Note: Questions 5 through 12 refer to your latest trip to New Mexico.
 5. If you answered yes, what was the primary purpose of your latest visit to New Mexico?
☐ Business ☐ Combination of Both
☐ Pleasure ☐ Visiting Relatives
 6. How long did you stay in New Mexico?
☐ Days
☐ Nights (Write in numbers)
 7. Excluding yourself, how many people were in your party?
☐ None
☐ Other Member(s) (Write in number)
 8. How did you get around during your stay in New Mexico?
☐ Own Car, Pickup, etc.
☐ Rental Car
☐ Other (Please Specify) _____
 9. How much would you estimate your *total* expenditures to be during your visit to New Mexico?
☐ Dollars
 10. Beyond basic expenses for transportation, food, lodging, entertainment and recreation, did you make any other purchases during your stay in New Mexico?
☐ Yes (Go to question 11)
☐ No (Skip questions 11 and 12 and go to question 13)
- *Note: The New Mexico Magazine and Santa Fe Opera group specified 12 months in Question 11. However, the time specification was 24 months for the Arabian Horse Association group.
11. If you answered yes, please indicate the type of purchases you or members of your party made and estimate your total expenditures for each. (Check all applicable)
- | | Estimated Total Expenditures |
|---|------------------------------|
| ☐ Clothing | |
| ☐ Men's | \$ _____ |
| ☐ Women's | \$ _____ |
| ☐ Children's | \$ _____ |
| ☐ Wines & Liquors | \$ _____ |
| ☐ Indian Jewelry | \$ _____ |
| ☐ Costume Jewelry | \$ _____ |
| ☐ Fine Arts, Paintings or Sculpture | \$ _____ |
| ☐ Indian Pottery, Ceramics | \$ _____ |
| ☐ Indian Rugs | \$ _____ |
| ☐ Souvenirs | \$ _____ |
| ☐ Sporting Goods | |
| ☐ Skis | \$ _____ |
| ☐ Hunting/Fishing Equipment | \$ _____ |
| ☐ Related Clothing | \$ _____ |
| ☐ Handmade Furniture | \$ _____ |
| ☐ Records and Books | \$ _____ |
| ☐ Photographic Equipment, Film & Development | \$ _____ |
| ☐ Other (Specify) _____ | \$ _____ |
| _____ | \$ _____ |
| _____ | \$ _____ |
| _____ | \$ _____ |
| _____ | \$ _____ |
| _____ | \$ _____ |
12. What was the general location in New Mexico of your purchases?
☐ Albuquerque Area ☐ Gallup Area
☐ Santa Fe Area ☐ Las Cruces Area
☐ Taos Area ☐ Roswell Area
☐ Carlsbad Area ☐ Farmington Area
☐ Raton Area ☐ Other (Please Specify) _____
 13. Do you plan to visit New Mexico in the next 12 months?
☐ Yes (Go to question 14)
☐ No (Go to question 15)
 14. If you answered yes, what will be the primary purpose of your trip?
☐ Business ☐ Pleasure ☐ Both
 15. What is your state of residence? _____
 16. What is your sex?
☐ Male
☐ Female
 17. What is your age?
☐ 20-24 years ☐ 35-39 years ☐ More than 65 years
☐ 25-29 years ☐ 40-49 years
☐ 30-34 years ☐ 50-65 years
 18. What is your marital status? (Number of members in household _____)
☐ Married ☐ Single ☐ Divorced
 19. What is your educational level?
☐ Less than High School ☐ College Degree (4 year)
☐ High School ☐ Advanced Degree
☐ Some College
 20. What is your annual income range (total family income)?
☐ Less than \$10,000 ☐ 26,000-30,000
☐ 10,000-15,000 ☐ 31,000-35,000
☐ 16,000-20,000 ☐ More than 35,000
☐ 21,000-25,000
 21. Please give your occupational category
☐ Management
☐ Professional
☐ Skilled Craftsman
☐ Retail/Wholesale
☐ Retired
☐ Other (Please Specify) _____

PLEASE RETURN THE QUESTIONNAIRE TODAY
 POSTAGE IS PREPAID
 THANKS AGAIN!

Current Economic Developments in New Mexico

MONTHLY SUMMARY

LEO W. CARBAJAL

It remains the opinion of most economists that the current recession affecting the national economy will continue through the end of 1980, followed by a moderate recovery beginning in 1981. With respect to the immediate future, the Commerce Department's index of leading economic indicators shows that economic conditions have deteriorated and that further declines may be expected throughout the summer. Following a steep decline of 4.1 percent in April, the overall index fell 2.4 percent in May. This represents the largest two-month decline in national economic activity since the end of World War II.

The major problem faced by the national economy continues to be the sharp cutback in consumer spending. The decline in real disposable income, combined with the effects of credit controls imposed by the federal government in March of this year, has acted to produce a significant cutback in consumer spending for most types of goods and services. Particularly hard hit have been the automobile and housing industries.

In New Mexico, the total civilian labor force increased only 0.3 percent (SA) in April. Total employment in the state fell 0.3 percent (SA) while the number of unemployed persons increased 8.9 percent (SA). Related to the increase in total unemployment was the state's unemployment rate which increased from 6.7 percent (SA) in March to 7.3 percent in April (SA). Since state unemployment normally experiences a significant seasonal decline in April, it appears that the national recession may be starting to play a greater role in the New Mexico economy. Weekly new unemployment insurance claims also re-

corded a significant increase in April, up 23.0 percent (SA) over the number registered for the previous month, and 42.8 percent (SA) above the figure for April, 1979.

The state's construction sector continues to be adversely affected by the national economic downturn. Contracts for nonbuilding construction projects declined 59.4 percent in April while non-residential construction contracts fell 18.3 percent. The only category within the construction sector to register an increase in April was residential building permits, which rose 30.1 percent (SA) above the March level. However, residential building permit activity in April was down 62.4 percent (SA) compared to year-earlier levels.

Activity in most major industries in the state increased only modestly in April. Jobs in transportation and wholesale trade grew by only 0.7 percent and 0.9 percent, respectively. April manufacturing employment declined by 0.3 percent. Retail trade jobs remained roughly the same.

In the financial sector, new bank loans were down 17.4 percent (SA) in April. Compared to year-earlier levels, this category was down 11.6 percent (SA), reflecting the impact which the recent, more restrictive credit controls and higher interest rates have had on both consumer and business borrowing during the first half of 1980. Bank demand deposits were off 8.3 percent in April compared to figures recorded one year earlier while bank time deposits were up 10.4 percent over the same period of time.

With respect to the tourist industry in New Mexico, higher fuel costs and the national recession represent significant negative factors. The

number of visits to the state's national parks were down 21.9 percent (SA) in April compared to the April, 1979 total.

There was virtually no change in state and local government employment in April, while federal government employment increased 3.8 percent above the level recorded for the previous month. This increase in the federal sector was primarily the result of the hiring of 1980 Census takers around the state.

In summary, the rate of growth of the state economy has slowed as a result of the national economic downturn. With respect to the immediate future, the coming months should see the New Mexico economy continue to experience a more moderate rate of growth strongly associated with the impact of the national recession upon the state's economy.

ECONOMIC INDICATORS

	Quarterly Averages			1980
	Second Quarter	Third Quarter	Fourth Quarter	First Quarter
1. <u>GENERAL</u>				
Civilian Labor Force ¹ (000)	536.3	545.3	546.9	541.5
Seasonally Adjusted*	533.6	536.1	545.0	556.0
Total Employment ¹ (000)	501.1	510.9	511.5	499.9
Seasonally Adjusted*	498.3	500.9	509.0	516.0
Unemployment ¹ (000)	35.1	34.4	35.4	41.7
Seasonally Adjusted*	35.3	35.2	36.0	40.0
Unemployment Rate (%)	6.5	6.3	6.5	7.7
Seasonally Adjusted*	6.6	6.6	6.6	7.2
Weekly New Unemployment Insurance Claims	1,171.7	1,114.0	1,362.7	1,524.0
Seasonally Adjusted*	1,283.0	1,220.3	1,318.7	1,354.9
Nonagricultural Wage/Salary Employment ² (000)	461.7	467.0	470.6	466.4
Seasonally Adjusted*	459.1	462.0	469.6	475.5
New Business Incorporations	240.7	243.3	298.0	na
Business Failure Liabilities (\$000)	0.0	0.0	na	na
2. <u>AGRICULTURAL RECEIPTS</u>				
From Livestock and Products (\$ mil.)	48.4	49.1	136.4	na
Seasonally Adjusted*	66.8	75.3	66.4	na
From Crops (\$ mil.)	10.6	17.0	40.2	na
Seasonally Adjusted*	16.9	19.1	22.4	na
3. <u>MINING PRODUCTION</u>				
Petroleum (000 bbls.)	6,578.6	6,663.3	6,763.7	6,486.9
Natural Gas (bil. cu. ft.)	95.4	94.7	99.5	97.3
Seasonally Adjusted*	96.3	97.4	97.3	96.1
Copper Ore (000 tons)	16.6	15.8	15.0	14.0
Coal Production (000 short tons)	940.0	944.0	1,023.0	1,220.7
4. <u>CONSTRUCTION</u>				
Residential Building Permits (\$ mil.)	30.1	25.7	13.7	12.6
Seasonally Adjusted*	26.5	25.8	16.7	13.1
Residential Construction Contracts (\$ mil.)	53.5	40.5	37.1	31.2
Seasonally Adjusted*	44.7	39.0	40.7	32.9
Nonresidential Construction Contracts (\$ mil.)	26.3	28.5	35.1	21.5
Nonbuilding Construction Contracts (\$ mil.)	16.5	26.3	16.6	14.6
5. <u>MANUFACTURING</u>				
Employment ² (000)	34.7	35.0	35.5	35.1
Seasonally Adjusted*	34.8	34.6	35.0	35.8
Average Weekly Hours	39.5	39.3	40.0	39.8
Seasonally Adjusted*	39.7	39.6	39.6	39.9

ECONOMIC INDICATORS (continued)

1980			Percentage Change				Percentage Change		
February	March	April	II 1978- II 1979	III 1978- III 1979	IV 1978- IV 1979	I 1979- I 1980	Feb. 1979- Feb. 1980	Mar. 1979- Mar. 1980	Apr. 1979- Apr. 1980
540.8	542.4	546.5	1.7	1.2	2.5	4.2	4.2	3.7	4.2
555.7	553.2	555.1	1.8	1.2	2.5	4.2	4.1	3.7	4.3
499.9	504.2	508.5	0.6	0.3	1.6	3.2	3.3	3.0	3.3
517.0	516.1	514.7	0.6	0.2	1.7	3.2	3.3	3.0	3.3
40.9	38.2	38.0	20.6	17.7	16.6	18.8	15.5	13.0	17.7
38.8	37.1	40.4	20.7	17.5	16.5	19.0	15.8	13.5	17.9
7.6	7.1	7.0	18.1	16.7	13.5	14.2	11.8	9.2	12.9
7.0	6.7	7.3	18.7	16.3	13.6	14.3	11.3	9.5	13.1
1,410.0	1,358.0	1,750.0	0.7	- 2.6	4.6	6.1	- 5.6	27.3	42.8
1,234.7	1,520.7	1,869.7	- 0.1	- 3.2	4.8	8.1	- 5.5	28.0	42.6
466.7	469.7	473.5	4.0	3.1	3.8	4.4	4.7	3.9	3.9
476.2	475.4	475.9	4.0	3.0	3.8	4.5	4.7	3.9	3.9
na	na	na	9.4	- 4.3	47.8	na	na	na	na
na	na	na	0.0	0.0	na	na	na	na	na
na	na	na	14.4	6.3	7.9	na	na	na	na
na	na	na	14.6	7.9	3.2	na	na	na	na
na	na	na	- 5.8	29.1	11.9	na	na	na	na
na	na	na	- 9.3	28.9	13.3	na	na	na	na
6,215.4	6,564.4	na	- 5.8	- 3.5	- 0.9	0.5	2.0	- 2.3	na
92.8	98.4	na	1.1	0.8	1.6	1.6	2.1	1.3	na
96.0	95.4	na	1.0	0.8	1.7	1.7	2.2	1.3	na
12.7	15.1	na	47.1	49.7	25.7	1.8	- 1.6	- 5.8	na
1,104.0	1,216.0	1,158.0	- 4.3	-12.9	- 2.8	12.3	26.3	- 7.9	51.0
13.4	9.8	10.5	- 1.0	-11.1	-33.9	-49.1	-33.8	-72.5	-62.6
15.2	7.3	9.5	- 0.6	-11.8	-31.9	-44.4	-33.1	-72.7	-62.4
29.9	23.4	18.7	10.0	- 6.1	6.8	-30.3	-27.9	-58.6	-70.3
34.8	19.5	17.9	10.4	- 5.8	2.7	-26.9	-27.4	-58.7	-61.9
21.1	24.0	19.6	87.0	64.1	40.1	31.7	129.4	67.8	-47.9
12.3	21.7	8.8	-55.2	6.6	- 1.4	-11.7	-62.6	429.3	46.7
35.1	35.1	35.1	5.4	2.8	3.7	4.4	6.0	2.9	2.3
36.0	35.6	35.5	5.4	2.9	3.7	4.3	6.1	2.8	2.3
39.4	39.6	39.0	0.7	2.2	2.6	1.1	1.8	- 2.0	0.0
39.5	39.4	39.3	0.7	2.2	2.6	1.1	1.7	- 2.1	0.0

ECONOMIC INDICATORS (continued)

	Quarter Averages			1980 First Quarter
	1979 Second Quarter	1979 Third Quarter	1979 Fourth Quarter	
6. <u>TRANSPORT./COMMUNIC./UTIL.</u>				
Employment	27.8	28.2	29.1	28.4
7. <u>TRADE</u>				
Wholesale Employment ² (000)	21.2	21.6	22.0	22.1
Retail Employment ² (000)	82.5	84.3	85.0	83.0
Seasonally Adjusted*	82.4	82.6	84.4	85.7
Average Weekly Hours	35.3	35.8	35.2	34.2
8. <u>FINANCE</u>				
Bank Debits (\$ mil.)	7,192.1	5,997.9	6,637.1	8,152.0
Seasonally Adjusted*	6,795.8	5,966.0	7,108.7	8,097.2
New Bank Loans (\$ mil.)	255.7	268.1	260.6	267.6
Seasonally Adjusted*	257.9	276.8	246.8	272.9
Bank Demand Deposits (\$ mil.)	1,045.3	1,036.4	1,057.3	976.0
Bank Time Deposits (\$ mil.)	1,780.1	1,835.0	1,875.2	1,897.8
Total Savings Deposits (Savings and Loan Assoc.) (\$ mil.)	1,814.3	1,852.8	1,925.5	1,983.8
New Savings and Loans Received (\$ mil.)	115.4	148.1	146.8	182.0
9. <u>SERVICES AND TOURISM</u>				
Service Employment ² (000)	89.0	92.0	88.7	90.2
Seasonally Adjusted*	88.2	88.8	90.1	93.0
Lodging Employment ² (000)	9.4	9.6	8.8	8.7
Seasonally Adjusted*	9.3	8.8	9.2	9.3
Visits to National Parks/Monuments (000)	201.4	251.2	74.4	74.3
Seasonally Adjusted*	165.9	148.1	139.9	142.0
10. <u>GOVERNMENT</u>				
Federal Employment ² (000)	36.6	37.9	37.0	36.7
State Employment ² (000)	33.5	32.0	35.8	35.3
City and County Employment (000)	51.4	48.1	51.8	52.6

* Seasonally adjusted figures are economic time series which have had seasonal variations removed with statistical processes. These purely seasonal variations include the effects of: the opening and closing of school, the annual pattern of seasons (especially applicable to agricultural data), holidays, and other annually recurring events which influence economic activity. By removing these seasonal variations from raw economic data, month-to-month analysis of trends and unusual fluctuations in economic activity is facilitated.

na Not available.

1 Number of persons by place of residence.

2 Number of jobs by place of work.

ECONOMIC INDICATORS (continued)

1980			Percentage Change				Percentage Change		
February	March	April	II 1978- II 1979	III 1978- III 1979	IV 1978- IV 1979	I 1979- I 1980	Feb. 1979- Feb. 1980	Mar. 1979- Mar. 1980	Apr. 1979- Apr. 1980
28.3	28.4	28.6	6.1	5.7	5.1	3.3	3.3	2.9	4.4
22.1	22.2	22.4	6.5	4.9	6.3	6.0	6.3	5.7	6.7
82.5	82.8	83.8	1.5	1.6	2.9	2.8	2.9	2.6	3.1
85.5	85.4	85.3	1.5	1.7	3.0	2.8	2.9	2.6	3.1
34.4	34.5	34.5	- 1.1	- 1.3	- 1.0	- 0.9	- 0.3	- 1.1	- 1.1
8,177.8	7,337.6	8,126.0	144.6	81.9	91.3	37.9	34.6	11.0	23.5
8,421.8	7,139.6	7,398.7	143.6	80.0	90.3	36.8	27.7	13.6	20.5
231.7	272.3	233.8	1.3	11.0	- 2.6	13.9	11.5	8.4	- 8.1
251.8	270.0	222.9	1.2	11.7	- 4.1	13.7	6.5	10.8	-11.6
972.9	1,006.0	934.5	3.7	- 1.1	- 0.2	1.3	1.5	3.6	- 8.3
1,902.3	1,933.4	1,946.4	12.5	12.3	11.7	10.2	11.1	9.8	10.4
1,978.8	2,009.0	2,007.3	14.7	12.1	12.4	11.5	11.5	11.5	11.2
147.5	186.0	226.7	26.1	51.1	45.2	54.0	58.1	77.3	83.0
90.8	91.3	91.2	1.9	0.8	0.7	6.1	6.3	6.0	5.3
93.7	93.6	92.6	1.9	0.9	0.6	6.2	6.3	6.0	5.3
8.7	8.9	9.0	1.5	- 4.3	- 2.6	- 1.6	- 1.1	0.0	- 1.1
9.3	9.3	9.4	1.4	- 4.3	- 2.6	- 1.5	- 1.3	- 0.1	- 1.1
59.9	111.8	139.9	3.4	- 6.9	- 5.8	-22.0	-12.1	-36.5	-24.0
128.7	158.6	156.9	8.2	- 6.9	- 3.1	-18.2	-17.6	-36.2	-21.9
36.6	36.6	38.0	3.9	5.5	3.4	3.5	3.1	2.8	4.7
36.1	36.4	36.4	6.8	2.0	5.5	4.8	5.3	5.5	5.2
52.8	53.2	53.2	2.2	0.1	3.6	3.7	3.7	3.7	3.3

Sources: New Mexico Department of Human Services, Employment Services Division: Sections 1, 5, 6, 7, 9, 10; Dun and Bradstreet, Inc.: Section 1; USDA Statistical Reporting Service: Section 2; Oil Conservation Commission: Section 3; New Mexico Bureau of Revenue: Section 3; Building Inspectors' reports, 18 cities: Section 4; F.W. Dodge Co. (a division of McGraw-Hill, Inc.): Section 4; Federal Power Commission: Section 6; Bank reports (36): Section 8; Federal Home Loan Bank of Little Rock: Section 8; United States Department of the Interior, National Park Service: Section 9.

[Editor's Note: The Albuquerque Food Price Index has been discontinued for budgetary reasons. This is the last issue of New Mexico Business to carry the index.]

ALBUQUERQUE FOOD PRICE INDEX: APRIL 1980
JUNE 1974 = 100(all items)

	Apr. 80 Index	June 74 Apr. 80	% Change Apr. 79 Apr. 80	Mar. 80 Apr. 80
ALL FOOD ITEMS	161.5	61.5	7.9	0.2
Cereals and Baked Products	158.8	58.8	24.0	3.4
Meat, Fish, Poultry	165.5	65.5	- 1.8	-3.5
Fruits and Vegetables	160.9	60.9	5.7	5.3
Dairy Products	145.5	45.5	10.5	1.3
Other Food Items	168.2	68.2	17.6	-0.6

Food Item	Quantity	April 1980		% Change		
		Price	Index	June 74 Apr. 80	Apr. 79 Apr. 80	Mar. 80 Apr. 80
Flour, all purpose	5 lb	\$1.13	97.8	- 2.2	17.2	0.4
Corn flakes	12 oz	0.71	183.1	83.1	21.5	4.1
Bread, white	1b	0.59	167.6	67.6	28.9	5.8
Cookies, cream	16 oz	1.25	158.9	58.9	19.0	- 1.8
Hamburger	1b	1.61	186.0	86.0	- 1.4	- 4.4
Round steak, bone-in	1b	2.20	175.0	75.0	- 8.9	-13.0
Sirloin steak, boneless	1b	3.55	na	na	na	na
Chuck roast, blade	1b	1.77	233.0	133.0	- 3.7	- 9.1
Beef liver	1b	1.31	na	na	na	na
Pork chops	1b	2.04	144.6	44.6	- 9.7	17.7
Bacon, sliced	1b	1.87	162.4	62.4	- 9.6	- 4.5
Pork roast, loin	1b	1.40	na	na	na	na
Frankfurters	1b	1.98	157.1	57.1	- 0.5	- 9.5
Fryers, whole	1b	0.60	121.3	21.3	- 9.3	- 5.8
Tuna, light chunk	6 oz	1.10	191.4	91.4	22.8	6.8
Bananas	1b	0.41	na	na	na	na
Oranges	Dozen	1.75	198.0	98.0	- 14.6	5.6
Lettuce	1b	0.60	138.4	38.4	79.2	29.7
Potatoes, except baking	1b	1.37	71.5	- 28.5	16.3	- 6.4
Tomatoes	1b	0.57	108.0	8.0	- 31.7	10.4
Carrots	1b	0.50	219.0	119.0	122.5	0.9
Onions, yellow	1b	0.22	157.8	57.8	- 12.4	6.2
Fruit cocktail	#303	0.67	178.9	78.9	14.4	4.3
Tomatoes, canned	#303	0.56	171.0	71.0	1.4	1.3
Peas, canned	#303	0.48	159.4	59.4	8.1	6.1
Frozen orange juice	6 oz	0.52	194.8	94.8	0.9	- 0.6
Frozen broccoli spears	10 oz	0.58	143.5	43.5	- 10.2	- 2.3
Milk	Quart	0.58	138.3	38.3	13.4	1.7
Evaporated milk	13 oz	0.49	165.9	65.9	12.6	3.1
Ice cream	1/2 gal	1.62	139.4	39.4	0.2	- 8.5
Cheese, sliced	6 oz	0.98	164.8	64.8	11.6	8.8
Eggs, AA large	Dozen	0.81	133.1	33.1	- 10.0	0.3
Margarine	1b	0.74	122.6	22.6	5.2	1.2
Sugar	5 lb	2.07	143.7	43.7	55.9	1.6
Coffee	1b	3.23	249.8	149.8	15.5	0.8
Instant coffee	6 oz	3.36	212.2	112.2	6.7	- 0.1
Cola drink	10 oz ctn	1.47	na	na	na	na
Chicken noodle soup	10 oz	0.33	145.8	45.8	17.2	4.1
Baby food, strained	4 oz	0.24	179.3	79.3	11.2	- 0.4
Frozen french fries	9 oz	0.45	207.8	107.8	69.3	-21.5

na Not available.

VALUE OF BUILDING PERMITS--SELECTED CITIES

	Residential				Nonresidential			
	April 1979	April 1980	Cumulative Total Through April		April 1979	April 1980	Cumulative Total Through April	
			1979	1980			1979	1980
Alamogordo	\$ 1,068,000	\$ 0	\$ 3,467,000	\$ 820,137	\$ 180,950	\$ 1,300	\$ 461,449	\$ 284,100
Albuquerque	15,961,816	4,596,196	61,314,962	23,516,115	3,725,535	4,720,000	13,347,810	20,941,434
Artesia	389,500	62,000	812,000	610,000	58,765	160,926	873,365	504,426
Carlsbad	193,000	224,100	716,750	629,000	120,500	90,000	1,495,540	241,500
Clayton	2,000	0	131,488	0	110,000	0	115,000	0
Clovis	748,755	85,844	2,421,735	470,832	54,909	138,000	487,452	511,140
Deming	175,500	146,000	687,500	837,550	21,900	0	36,900	1,574,100
Farmington	1,290,231	326,614	3,687,640	2,721,840	531,406	1,898,734	2,142,545	2,966,005
Gallup	238,002	247,812	1,220,458	707,896	239,630	356,000	895,630	4,544,941
Grants	421,240	358,020	1,499,080	1,607,097	40,000	104,000	118,500	288,000
Hobbs	1,278,000	530,500	2,691,500	2,868,500	546,000	444,820	1,113,585	1,103,420
Las Cruces	2,347,571	216,239	9,716,424	3,911,285	660,382	278,900	1,397,536	2,518,203
Las Vegas	28,872	22,344	128,005	184,603	0	0	34,000	0
Lordsburg	0	0	55,500	40,000	0	0	73,500	132,000
Portales	206,000	0	818,500	124,892	0	0	440,300	450,000
Raton	0	156,440	164,125	194,195	0	0	34,000	0
Roswell	978,500	261,800	4,286,589	2,509,168	456,735	1,875	573,345	423,910
Santa Fe	2,867,953	3,178,460	8,623,499	6,407,615	20,000	1,059,000	1,303,000	4,828,373
Tucumcari	0	112,816	35,000	202,627	0	1,060,342	1,248,000	1,117,335
TOTAL	\$28,194,940	\$10,525,185	\$102,477,755	\$48,363,352	\$6,766,712	\$10,313,897	\$26,191,457	\$42,428,387

Source: Individual reports by city building inspectors

ESTIMATED CIVILIAN LABOR FORCE AND EMPLOYMENT

	New Mexico			Albuquerque SMSA ¹		
	April 1979 ^r	March 1980 ^r	April 1980 ^p	April 1979 ^r	March 1980 ^r	April 1980 ^p
Total Civilian Labor Force	524,500	542,400	546,500	198,100	206,800	207,400
Employment ²	492,200	504,200	508,500	186,400	192,400	193,100
Unemployment	32,300	38,200	38,000	11,700	14,400	14,300
Percentage of Labor Force	6.2	7.0	7.0	5.9	7.0	6.9
Nonagricultural Wage & Salary Employment	455,900	469,700	473,500	184,900	191,000	192,200
Mining	26,300	28,300	28,400	na	na	na
Contract Construction	35,800	33,700	34,600	15,600	14,900	15,100
Manufacturing	34,300	35,100	35,100	17,700	18,400	18,500
Durable Goods	20,000	20,600	20,500	12,200	12,800	12,800
Nondurable Goods	14,300	14,500	14,600	5,500	5,600	5,700
Transportation & Public Utilities	27,400	28,400	28,600	10,800	11,800	11,900
Trade	102,300	105,000	106,200	46,400	47,200	47,800
Wholesale	21,000	22,200	22,400	12,700	13,400	13,600
Retail	81,300	82,800	83,800	33,700	33,800	34,200
Finance, Insurance, & Real Estate	20,800	21,700	21,800	10,600	11,200	11,300
Services & Miscellaneous	86,600	91,300	91,200	41,800	44,200	44,200
Government ²	122,400	126,200	127,600	42,000	43,300	43,400
Federal	36,300	36,600	38,000	12,700	12,700	12,800
State	34,600	36,400	36,400	11,100	11,500	11,400
Local	51,500	53,200	53,200	18,200	19,100	19,200

na Not available. Less than 50 jobs.

p Preliminary.

r Revised.

¹ Albuquerque Standard Metropolitan Area includes Bernalillo and Sandoval Counties.² Includes labor disputes.

Source: New Mexico Employment Security Department.

NUMBER OF BUILDING PERMITS--SELECTED CITIES

	Residential				Nonresidential			
			Cumulative Total				Cumulative Total	
	April 1979	April 1980	Through April 1979	Through April 1980	April 1979	April 1980	Through April 1979	Through April 1980
Alamogordo	25	0	82	20	6	2	22	13
Albuquerque	331	76	1,252	394	23	11	73	81
Artesia	12	2	25	17	8	6	22	20
Carlsbad	4	5	18	14	3	2	11	6
Clayton	1	0	6	0	1	0	3	0
Clovis	28	3	90	18	1	1	17	7
Deming	6	4	22	23	2	0	3	1
Farmington	24	9	97	76	6	4	26	16
Gallup	3	4	22	12	4	3	10	9
Grants	14	7	44	32	1	2	6	5
Hobbs	25	11	58	60	3	3	8	12
Las Cruces	52	5	192	75	4	5	35	18
Las Vegas	1	1	5	6	0	0	1	0
Lordsburg	0	0	3	1	0	0	1	3
Portales	4	0	21	3	0	0	2	1
Raton	0	4	7	6	0	0	2	0
Roswell	24	6	99	52	17	6	46	22
Santa Fe	76	29	213	84	1	7	7	14
Tucumcari	0	4	2	7	0	1	2	2
TOTAL	630	170	2,258	900	80	53	297	230

Source: Individual reports by city building inspectors.

CONSUMER PRICE INDEXES AND INDEXES OF SELECTED CATEGORIES

U.S. City Average
(1967=100)

	All Urban Consumers				Revised Series, Wage Earners and Clerical Workers			
			% Change				% Change	
	March 1980	April 1980	April 1979-April 1980	March 1980-April 1980	March 1980	April 1980	April 1979-April 1980	March 1980-April 1980
ALL ITEMS	239.8	242.5	14.7	1.1	239.9	242.6	14.5	1.1
Food	247.3	249.1	7.2	0.7	247.5	249.5	7.2	0.8
Housing	254.5	257.9	17.3	1.3	254.4	257.8	17.3	1.3
Apparel & Upkeep	176.0	177.3	7.2	0.7	175.1	176.1	6.5	0.6
Transportation	243.7	246.8	21.6	1.3	244.3	247.7	21.6	1.4
Medical Care	260.2	262.0	11.4	0.7	260.9	263.1	11.9	0.8
Entertainment	200.6	202.5	8.6	0.9	199.5	201.3	8.5	0.9
Other Goods & Services	208.9	209.8	8.6	0.4	208.3	209.2	8.3	0.4

Source: U.S. Department of Labor, News.

HOURS AND EARNINGS OF PRODUCTION
CONSTRUCTION AND NONSUPERVISORY EMPLOYEES
NEW MEXICO

	Average Weekly Hours				Average Hourly Earnings			
			% Change				% Change	
	April 1980 ^p	March 1980	April 1979	April 1979-April 1980	April 1980 ^p	March 1980	April 1979	April 1979-April 1980
Mining	40.5	41.4	44.6	- 9.2	9.53	9.15	7.99	19.3
Construction	36.4	36.6	34.0	7.1	9.81	9.43	8.73	12.4
Manufacturing	39.0	39.6	39.0	0.0	5.70	5.65	5.32	7.1
Durable Goods	40.9	41.4	40.9	0.0	6.12	6.10	5.64	8.5
Nondurable Goods	36.0	36.7	36.0	0.0	4.94	4.85	4.74	4.2
Communication & Utilities	40.9	41.1	40.7	0.5	7.65	7.58	7.12	7.4
Trade ¹	34.5	34.5	34.9	- 1.1	6.16	5.97	5.46	12.8
Banking	35.8	38.2	40.6	-11.8	4.31	4.21	3.62	19.1

^p Preliminary.¹ Excludes eating and drinking places

Source: New Mexico Employment Security Department.

ALBUQUERQUE¹ BANKING DATA
(\$000s)

	April, 1979	April, 1980	% Change April, 1979- April, 1980
BANKS			
Bank Debits	\$5,445,463.3	\$6,691,919.1	22.9
New Loans & Discounts	127,951.8	135,992.4	6.3
Demand Deposits	525,525.3	475,788.2	- 9.5
Time Deposits	872,325.1	990,931.1	13.6
SAVINGS & LOAN			
Savings Deposits	\$ 814,200	\$ 905,900 p	11.3
New Savings Received	68,800	114,900 p	67.0

p Preliminary.

¹ Bernalillo County for bank information, Albuquerque SMSA for savings and loan data.

Source: Five reporting banks and Federal Home Loan Bank of Little Rock.

Due to an error by one of the banks, bank debits were reported incorrectly in the Albuquerque Banking Data table and in the Economic Indicators from April, 1979 to March, 1980. The corrections appear below.

BANK DEBITS--NEW MEXICO AND ALBUQUERQUE¹
(\$000s)

	1979								1980				
	April	May	June	July	August	September	October	November	December	January	February	March	April
New Mexico	6,579.0	7,503.0	7,494.4	6,636.4	6,492.1	4,865.2	6,682.5	6,205.2	7,023.6	8,940.5	8,177.8	7,337.6	8,169.5
Albuquerque	5,445.5	6,351.9	6,363.8	5,453.6	5,322.0	3,776.1	5,348.5	4,865.6	5,810.8	7,379.9	6,869.8	5,955.7	6,691.9

¹ Bernalillo County.

Source: Individual reporting banks.

ERRATUM FOR JUNE NMB

Page 12, paragraph 3, the sentence "Present peak water consumption in Albuquerque is 36,000 acre-feet so that the city faces no immediate water supply problems," should be deleted and replaced with: "Albuquerque water consumption was approximately 43,000 acre-feet in 1979 so the city faces no immediate water supply problems."